THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.
Entered at the Post-Office of New York, N. Y., as Second-Class Mail Matter.

VOL. LXIX. MARCH 10, 1900. No. 10.

RICHARD P. ROTHWELL, C. E. M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
THE SCIENTIFIC PUBLISHING CO., Publishers.

Subscriptions are PAYABLE IN ADVANCE For the United States, Mexico and Canada, $5 per annum: all other countries in the Postal Union, $7.
REMITTANCES should be made by bank drafts, post office orders or express money orders on New York, payable to the Scientific Publishing Co.
When change of address is desired, both old and new address should be sent.
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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.)
London Cable Address—"FULCHESTO." " " " "

Branch Offices: Chicago, Ill., 737 Monadnock Building, Phone 73 Harrison.
Denver, Colo., Boston Building, Room 306.
Salt Lake City, Utah, Atlas Building.
San Francisco, Cal., 207 Montgomery Street.

City of Mexico, 104 Ave. Madrid. Robt. S. Barrett, Manager.
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London Eng., Office, 20 Bucklersbury, 368. R. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

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The validity of the MacArthur-Forrest cyanide patents has been a source of much litigation and negotiation in various parts of the world. The latest news on the subject is that the Government of Victoria, in Australia, has just purchased the patent rights in the Colony for the sum of £20,000, allowing the owning company to retain all royalties up to date. This amicable arrangement puts an end to litigation which had been expensive to all parties and makes it unnecessary to proceed with the appeal from the Colonial High Court to the Judicial Committee of the Privy Council of England. We are not informed whether the Government intends to impose a small tax on products until the £20,000 is repaid, a policy which was pursued by New Zealand when dealing with the same patents, or whether the sum in question is to be paid out of ordinary revenue. The present Minister of Mines, Mr. Outtram, has made a better bargain than that proposed by his predecessor, who was willing to pay £31,000.

The owners of the Republic Mine in Washington have taken an important step in regard to the treatment of the low grade ores, of which there is a very large quantity already on the dump or blocked out in the mine. The Pelatan-Clerici process, which has been in use at this mine, has not proved successful, the recovery of gold reaching a lower percentage than is considered satisfactory, while the cost of the process is too high to yield a profit on a large part of the ores. They have therefore decided to make a radical change in the mill. The high-grade ores will be shipped to a smelter as heretofore, while a plant for the treatment of the low-grade ores on a very large scale will be erected under the superintendence and from the designs of Mr. D. C. Jackling. The plans have not been made public as yet, but the plant will probably be on very much the same lines as that which Mr. Jackling successfully worked out for the De La Mar-Mercur Mine in Utah, and which was described in the "Engineering and Mining Journal" December 23d and 30th, 1899. The results of this work will be watched with a great deal of interest, as its success will mean a great deal, not only to the Republic Mine itself, but to other mines in the district, the ores of which are of a similar character.

The question of time in coke-making, which was discussed by a contributor in our last issue, becomes an important one at the present time, when the demand for coke is enormous, and the makers are unable to supply it as fast as it is called for. In the coke-making regions the activity is unprecedented; thus our last report from the Connellsville District showed that less than 3 per cent. of the coke ovens in the district were idle during the week, which does not allow for the repairs usually required. A reduction in the time required for coking would, of course, increase the output largely. The experiments made in this direction with the bee-hive oven have not been successful thus far. The more general adoption of the retort oven in some one of its well-known forms would, however, not only reduce the time required, but would extend the limit of coking coals, and permit the use of some coal which is not now generally considered available for coke. We say nothing here of the reduction in cost effected by saving the by-products, though in Germany it is generally considered that they pay a very handsome profit on the additional cost of the ovens. The present seems to be an excellent time for the introduction of improved types of ovens, and it is to be hoped that the coke-makers in enlarging their plants, as many of them propose to do, will carefully consider the merits of these types.

One of the most important and obstinate strikes ever known in Europe is that of the Austrian coal miners, which has now lasted over two months, over 70,000 men being idle. Nearly all the coal mines in Austria and Bohemia are closed, and serious difficulty has resulted, many factories being closed down for want of fuel, while the railroads have difficulty in keeping up their train service. The questions at issue include the rate of wages, the hours of labor and some other points, such as the store system and lodging of the men and their families. The Government has intervened and attempted to settle the controversy, but without success, and the best that it has been able to do is to promise to submit a law to the Reichsrath, which is now in session, providing for the protection of the miners. It is admitted that the men have substantial grievances, that their condition has been very bad, and that they have been treated unjustly and oppressively by many mine-owners.

At first the coal miners in Hungary took no part in the movement, but recently the men in the important mines of the Hungarian State Railroads struck also, and their example is likely to be followed by others. Moreover, the latest news is that some 5,000 miners in the district of Zwickau in Saxony have refused to work because coal from the

mines was shipped to Austria. Should this movement extend in Germany it will produce serious embarrassment.

The only supplies of which Austrian consumers can readily avail themselves are from Germany. But Germany has no coal to spare, and there are many complaints of the scarcity and high price of fuel. Moreover, Germany usually takes a large part of the brown coal mined in Bohemia, and this supply is now cut off, causing a further call upon the German mines. At present the Austrian miners seem to have a strong position, and it looks as if the mine-owners must make some concessions.

The report of the Quincy Mining Company for 1899, while it shows increased earnings resulting from the high prices of copper during the year, is chiefly remarkable from the fact that the proportion of copper recovered from the rock taken from the mine shows a marked decrease. The product of the Quincy for some years previous to 1899 was rather over than under 1.50 per cent. of the rock sent to the stamps, or at least 30 pounds of copper to the ton of rock handled. In 1896 the proportion was 1.52; in 1897 it was 1.56, and in 1898 it was 1.50 per cent.; but in 1899 it dropped to 1.28 per cent., or 25.6 pounds to the ton. The reduction was a serious one, amounting to over one-sixth of the product, and it is shown very plainly in the mine expenses. In the following table will be found a comparison of the earnings and expenses per pound of fine copper recovered, in 1898 and 1899.

	1898.	1899.	Changes.	
Per cent. of copper in rock stamped	1.50	1.28	D.	0.22
Average receipts per pound of copper, cts.	12.14	17.13	I.	4.99
Average cost per pound, mining	5.43	6.78	I.	1.35
Average cost per pound, smelting, etc.	1.17	1.07	D.	0.10
Average cost per pound, taxes	0.22	0.28	I.	0.06
Average cost per pound, new construction	1.35	2.83	I.	1.48
Total average cost per pound	8.17	10.96	I.	2.79
Average profit per pound of copper	3.97	6.17	I.	2.20

In both years the amount of rock handled and stamped was practically the same, the difference in quantities being less than 2 per cent. A small part of the increase in expenses was due to the generally higher range of prices of supplies and labor; and there was in 1899 a larger expenditure for new construction for the previous year. The total expenses per pound of copper last year was 10.96 cents, an amount which at the prices of 1898 would have left a profit of only 1.18 cents a pound, and would have caused a heavy diminution of the company's dividend surplus. As it was, however, the rise in copper saved it, and made possible the payment of increased dividends, amounting to $850,000 for the year.

This falling off in the percentage of copper is an important point, and is exciting a good deal of interest in the Lake Superior country. It is possible, of course, that the current year may show an improvement. If it does not, it will be rather a serious matter for the Quincy, and will require some stringent economies in the management to keep up dividends.

THE TRANSVAAL MINING SITUATION.

In another column we publish the first of a series of articles written for us by a correspondent long resident in the Transvaal and thoroughly acquainted with the conditions and operations of the mines in that country. Our correspondent has remained in Johannesburg since the outbreak of the war, and has, in fact, been concerned in some of the mining operations that are still carried on, and he has necessarily been in close touch with the Government authorities, who are now controlling the mines, and, as we understand it, what he writes has met with their approval. Since these articles contain the Government engineer's report, they represent the official view of the present conditions of the mines. We have considered it very important to present these facts, because we believe that the real condition of affairs is not known here or in England, and has not been presented hitherto. The English and Continental papers, deeply interested as their readers are in the Transvaal mines, do not appear to have had opportunities of securing the facts in the case, and have possibly also been actuated by prejudice on one side or the other. We publish these letters substantially as they are written, not indorsing, of course, the views of our correspondent, but permitting him to state that view of the case.

The first thing which will impress the reader is the strong feeling which is manifest against the owners and managers of what are known in the Transvaal as the "English Mines;" that is, the mines whose stockholders are chiefly English, and whose management is altogether so. Toward the other mines, which are largely owned in France and Germany, much greater leniency has been shown, especially to those which are managed by French or German officials, and the feeling is even different in those cases where the managers themselves are Englishmen. This feeling is not, of course, an unnatural or unexpected one. Apparently the Government expected that the larger mines would be kept in operation, and that the officials and skilled workmen would remain at their posts. There is evidently a feeling of disappointment because so many of these men left at the outbreak of the war, and it seems to have been the general belief of the Boer officials that they were forced to do so by the companies. There is an especially bitter feeling because many of the English workmen have joined the Colonial forces, which are now part of the army operating in South Africa.

It is well understood that the number of American engineers and others employed on the Witwatersrand is less than it was some years ago. The policy adopted by many of the companies has been to reduce the number of high-salaried Americans as far as possible, and replacing them by cheaper Europeans. Those Americans who were still employed seem, for the most part, to have followed the example of the English, and left Johannesburg at the outbreak of the war wherever they could do so without incurring too heavy losses.

We may say here that it is our business and intention to deal with this subject entirely in its relations to the mining industry; we do not wish to enter into a political discussion. The mining and political questions, however, are so intimately involved that some political references are inevitable. In this place we may be permitted to mention briefly a point which has been very little spoken of, especially in the United States; and that is, that recent developments, and our correspondent's remarks, leave no possible doubt of the intention, which has existed for years, of building up a great Afrikander State, and the eventual termination of British power in South Africa. The English Government has certainly been aware of this, and this may explain some of its movements which have not been well understood.

To revert to the actual conditions of mining matters in the Transvaal, it seems to have been the intention of nearly all the managers to close down the mines as completely as possible, naturally stopping the production of gold, which would be taken from them, and, if possible, leaving only a small force to guard the property, and do such pumping and other work as might be necessary to prevent serious injury to the underground workings. The care of the property was the more important point, since the amount of damage which could be done by stopping the pumps was not in any case very great. The Witwatersrand mines are not, as a rule, wet mines; the quantity of water coming into them has never been very large, and, in fact, since the sinking of shafts on the second row, or deep-level mines, many of the first row, or outcrop mines, have not been obliged to do any pumping at all. The great majority of the workmen either left of their own motion or were discharged; the Europeans, as a rule, going to Natal or the Cape of Good Hope, while the black laborers returned to their own kraals. No one, in fact, was allowed to stay in the country without a permit, but the local authorities in Johannesburg, it is claimed, not only issued such permits to all who wished to stay, but offered them to many who refused to accept them. It is stated, and is probably true, that more would have stayed had they not been notified by the companies generally that they would not be given employment after the conclusion of the war if they remained in Johannesburg. As to closing, it must be admitted that there was very little inducement to keep the mines open in view of the difficulties which would have attended operation under war conditions, and to this was added the action of the Government in commandeering a large quantity of gold, which was in the banks or in possession of the companies at the outbreak of hostilities. Of course, the gold so taken would be a debt of the Government, but some doubt might be permitted as to the time and manner of its repayment.

The first action of the Government after the closing down of the mines was to take matters into its own hands, replacing the guards and watchmen left by the company by police of its own selection. The next was to order the operation of a certain number of the richer English owned mines directly by Government officials, and German or French owned mines by managers or representatives of the companies under Government supervision. In both cases the gold is taken by the Government and sent to the mint at Pretoria. The mines operated by the Government directly include the Robinson, and three others of the richer mines. A further step taken was to prohibit pumping in a number of the English mines, while the pumps were allowed to work in the case of a number of the mines which are owned chiefly in France and Germany. As far as fuel is concerned, there has been no trouble about the supply, since coal mining has continued without interruption in the district adjoining the Witwatersrand. With regard to the mines operated under Government management, much complaint has been made as to the condition of the machinery, and it was charged that, before leaving, the managers in many cases caused the machinery to be purposely damaged in order to prevent its use. Very probably this is true in part, but it is also very likely that break-downs may have been caused in many cases by careless or inexperienced workmen, who would take the easiest way of covering their own fault by accusing the absent Uitlander.

We may mention here that our letters confirm what was generally supposed, that the movement of the Boer forces into Natal and the operations which culminated in the siege of Ladysmith were at least partly intended to close down the coal mines in Natal, and thus embarrass the operations of the British transports at sea, and of the Cape railroads.

This sums up generally the condition of affairs at the mines up to December 23d; our second letter, dated January 6th, gives the working at some of the large English mines. Should the chances of war bring the contending armies to a point near Johannesburg, the mines would certainly be affected; probably no deadwork or repairs not absolutely necessary to continue output temporarily would be done. It does not appear on the one hand that, as some of the English papers have charged, there is any intention on the part of the Transvaal Government to destroy the mining industry or to injure it seriously. On the other hand, the Government seems to have no particular respect for the rights of English owners of the mines, nor does it seem to have had any scruple about fostering the feeling of hatred which the Boers entertain toward the English. We may note here that there seems to be a lack of correct information existing in Johannesburg, and that some curious ideas are entertained there. It is generally believed, our correspondent writes, that it is the intention of the English to exterminate the Boers completely, and that they are bringing for that purpose a large force of native Indian troops to South Africa, possibly with the idea that the Sikhs and Ghoorkas would be less scrupulous about slaughtering white men than English soldiers. Other equally unfounded beliefs also seem to prevail.

As to the future of the mining industry, it is, perhaps, too soon to speak, and our readers may be left to draw their own inferences from the accounts which we present now and those which will follow. Perhaps the point which will most interest them will be the condition in which the mining properties will be found after the war, and on this point our correspondent's letters will afford them some means of judging. We do not ourselves anticipate that there will be any wilful destruction of mining works or machinery. In the mines which are not operated there will be, of course, the deterioration caused by disuse, although this is reduced to a minimum in a dry climate like that of the Transvaal. In the operating mines the damage will quite possibly be greater, owing to unskillful handling, and the fact that workmen employed under the conditions which now exist cannot be expected to take any very great interest in caring for property for which they are not responsible, or which is owned by men they regard as their enemies. In mining it is probable that the Government managers will aim only at immediate output, and that development work will be neglected; in other words, that the mines will be robbed. This information, which comes to us from other sources, is partly confirmed by our correspondent's statements. The owners must expect to find the ore reserves which had been blocked out, pretty well exhausted, and the cost of putting the mines and mills into condition again will be heavy and require much time.

The latest reports from Natal, however, are that the Boer forces set fire to the coal mines around Ladysmith before retiring from their positions near that town. The object, of course, was to make the mines useless to the English. If the war is to be carried on in this spirit, however, it seems quite possible that the ruin of the Witwatersrand mills and mines may precede the surrender of Johannesburg.

A great deal of stress has been laid upon the reduction in expenses which can be made should the oppressive taxes and monopolies of the Transvaal be done away with. There is another point, however, to be considered. We assume that there is no doubt of the ultimate success of Great Britain, and that the final settlement of the contest will be dictated by the British Government. Should it be considered policy to permit the Transvaal to retain an independent or semi-independent government, a heavy war indemnity would undoubtedly be imposed upon it. Should the country be made a British colony, some portion of the cost of the war would be placed upon it in a slightly different form. In either case the Government of the country will have to provide for the payment of large sums of money as interest and principle of the war debt. This will necessarily involve heavy taxation for a considerable period. Only a very small amount could be raised by taxing lands, and the bulk of the tax, whatever it may be, would have to be paid directly or indirectly by the mines. It is quite possible that this taxation will be a greater burden upon the mining industry for some time than those of which they have heretofore complained.

NEW PUBLICATIONS.

"Field Columbian Museum, Chicago. Annual Report of the Director for the Year 1898-99." F. J. V. Skiff, Director. Chicago, Ill.; published for the Museum. Pages, 76; illustrated.

This brief report gives the operations of the Field Columbian Museum for the year closing September 30th last. Considerable work has been done in the better arrangement of the Museum, in additions to the different collections and the library, and in the courses of lectures which have been delivered. Expeditions were sent out during the year to the West Indies, to California, to Puget Sound and Vancouver Island, to Wyoming, to sections of Southern Illinois and Northern Indiana, all of which added materially to the mineral and other collections. The report shows encouraging progress during the year.

"Report of the Governor of New Mexico to the Secretary of the Interior for 1899." Miguel A. Otero, Governor. Washington; Government Printer. Pages, 376; illustrated.

This report is devoted chiefly to a presentation of the natural resources of New Mexico, in which the mines find a prominent place. It contains many interesting facts, and some excellent suggestions for the better development of the Territory.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Western Australia: Statistical Register for the Year 1898." Part III. Compiled in the Registrar-General's Office. Perth, W. A.; Government Printer. Pages, 28.

"The Cost of Living as Modified by Sanitary Science." By Ellen H. Richards. New York; John Wiley & Sons, and London; Chapman & Hall, Limited. Pages, 120. Price, $1.

"On the Occurrences of Phosphatic Deposits in the Jenolan Caves, New South Wales." By J. C. H. Mingaye. Sidney, N. S. W.; reprinted from "Records" of the Geological Survey. Pamphlet.

"Notes and Analyses of Some New South Wales Phosphatic Minerals and Phosphatic Deposits." By J. C. H. Mingaye. Sidney, N. S. W.; reprinted from "Records" of the Geological Survey. Pamphlet.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Some Arizona Mining Schemes.

Sir—In my letter which you published in the "Engineering and Mining Journal" for February 10th, your types made me say that the Belcher ore would not run over 10 per cent. copper. This is a mistake, as I intended to write not over one per cent. copper, which makes a difference. While I am on this subject, I may say that my information on the Belcher is certainly up-to-date, and is much more accurate than any which the prospectus writers can have. I know well a party who was interested in a lease upon the property, and who ran in the long tunnel over 300 ft. on the vein. The ore from this, when rough-sorted, gave less than $4 a ton in gold on the plates, while the pyritic concentrates were worth less than $12 to $16. After that time Merriwether Bros., of Kansas City, bought the property through a third party for $5,000, giving the agent a quarter interest. They held it for about 6 months, and then bonded it to the Providence Mining Company, of Chicago, for $24,000, receiving $4,000 cash down. That company sank a winze back in the tunnel for a short distance, but the ore was so low grade that the company threw up its bond. The Providence Mining Company also owned an iron mine, the Little Annie, almost alongside but below the Belcher, and on this property there was a 10-stamp mill. The mine did not pay, however, and the company closed it down. Just across the gulch is the Lottie Mine, also with a mill, but the Lottie Company failed to make this pay. Henry B. Clifford has a bond on both mines and mills, and is at present running the Lottie, and he has also put up a gasoline hoist on the Belcher. A few months ago Mr. Merriwether was trying very hard to get some one to take hold of his property, which had been thrown back on his hands by the surrender of the bond.

The Arizona, Eastern & Montana Company, I see by the papers, has been paying some dividends, doubtless for the effect on the stock. The company is doing nothing now. The Lone Pine Mine is not owned by them, and is now worked by its owner. The facts are that Clifford, when he came out here for the Arizona, Eastern & Montana Company, took bonds in his own or in his wife's name on all the good property he could get hold of, and commenced to sell the ore from these properties to the company. The company, however, as was announced some time ago, found out what he was doing and induced him to go on to New York, where it is said they made him square up. However, it looks as if Clifford got the best of it after all, since about the only thing he turned over to the company was his bond on the Lone Pine, on which he had made a payment, and of which he had a lease under royalty. It looks down here as if the Arizona, Eastern & Montana was practically defunct. It has dropped the Lone Pine, and it is said it will not and cannot pay the rent now due on the smelting plant it has been running.

The articles of incorporation of the Great Belcher Mining Company, as filed here, have three incorporators; one of them is Clifford himself, one his wife, and the third one Frank A. Davis, nominally of Chicago, who is, I believe, Clifford's brother-in-law. The same parties are all incorporators of a dozen or more companies, for which he has filed articles in the Territory. Although his character is pretty well known here the people back him up to a certain extent, because they expect him to sell stock in the East and raise the money to pay them. They say he is sure to get enough out of the Eastern people to spend a lot in Arizona, and they are too short-sighted to see that every dollar spent

in that way cuts off supplies for genuine enterprises in the Territory, besides giving it a bad name which will tell in the future. At present Clifford does not own a solitary property here, unless it may be some side location he has made to cover ground valuable for stamp or mill purposes.

It is a great pity, for there are plenty of good mines in Arizona which ought to be worked; but I think at present there are fully 25 worthless companies operating in Yavapai County, including Clifford's bunch, the Val Verde, the United Verde Extension, the United Verde Jr. and the Whipsaw. These are the most prominent, but unless a man makes a special business of it he cannot keep track of all. Traveller.

Yuma, Ariz., Feb. 26, 1900.

Pig Iron Made from Titaniferous Ores.

Sir: I notice in your answer to your correspondent, L. A. O. G., on page 174 of your issue of February 10th, 1900, certain statements which can only be attributed to a misunderstanding of the question at stake. Leaving aside entirely the question of the smelting of titaniferous ores as successfully and economically as others free from titanium, a question about which there is no doubt in our minds, as the near future will prove, if there is a fact which is conceded by all—even those who have objected the most to their use, some on account of the so-called economy as to fuel, others on the score of infusibility of slags containing titanium; others still on other respects not very clearly stated, or curiously contradictory—it is the quality of the pig metal made from these ores, and we submit in proof of this assertion the easily controllable and authentical references we give below.

Titaniferous pig, that is, pig iron that has been made exclusively from titaniferous ores very high in titanium, containing, as some of these ores did, as much as 40 to 45 per cent. of titanic acid—ilmenites from Norway and Canada—is essentially a forge iron, stated to be so, and of course, as such, not any better adapted for foundry purposes, when used alone, than any other forge iron would be; but, used in proper mixture with foundry iron for castings for machinery, or for car-wheel metal, it imparts to them remarkable properties of toughness and strength. Titanic oxide is not reduced by carbon at the temperature of the blast furnace, and whenever titanium passes in the pig metal, as it does to a very limited extent, from a few hundredths or tenths of 1 per cent. to 1 per cent., this is due, according to us, to special conditions which we have investigated. Furthermore, the amount of titanium found in the pig is in no way proportional to the percentage of titanic acid present in the ores. Ores containing 40 to 45 per cent. titanic acid have yielded pig metal containing 0.05 to 0.25 per cent. to 1 (analysis from the Paris School of Mines), while the pig metal obtained from the regular ores of the Cleveland and Northamptonshire districts, in England, which contain an important amount of titanic acid, though rather small, contains regularly and normally, says Dr. Riley, "from 0.25 up to 1 per cent. of titanium, rarely over," and the "Bessemer pigs are those which contain the most." Surely the presence of titanium to the extent of 1 per cent. in the pig metal, in this case, does not prevent it from making "an excellent foundry pig," "a Bessemer pig," certainly not a brittle one.

To substantiate all of our preceding statements we refer your readers to the following references:

"When smelting titaniferous ores, a gray titaniferous iron is produced which is said to yield an excellent wrought iron and steel, but it is still doubtful whether any portion of the titanium is retained in the wrought iron or steel made from such products. So that the improvement attributed to the use of titaniferous ores is probably due to some indirect action rather than to the actual presence of titanium in the finished product." (Crookes & Rohrig's Adaptation from the German Edition of Prof. Kerl's "Metallurgy." London, 1869, Vol. II., p. 316.)

"About 1 per cent. of titanium may be present in pig iron, it increases 'the strength of metal'." (Ibidem, p. 317.)

"The iron obtained at Norton, England, from Norwegian ilmenites (in 1868-73) was found to be extremely strong and was used in Europe for armor plates." (Osborne, "Metallurgy," p. 475.)

"This iron went to the armor plates of Sheffield on account of the toughness which this iron not only possesses but imparts to other irons in admixture in the puddling furnace (open hearth) titanium has been considered a specific for cold shortness in Norway and Sweden. When rolled into plates and merchant bars it possesses such a clean, tough, soft nature as would render it invaluable for boiler plates, sheets for cold stamping and kindred uses." (Mr. Deby, Foreign Secretary Iron and Steel Institute (English), 1877, No. I., p. 213.)

"Titanium is found in very variable proportions in certain pigs to which it appears to communicate a great tenacity." (Rivot's "Doumarie," p. 156.)

"In Sweden it is a common practice to add 10 per cent. of titaniferous ores to the charges with a view to remove sulphur. . . . Whatever may be the reason of the effect, what is known with a certainty is that titaniferous ores, in the United States, New Zealand, Canada, Sweden and Norway, are such that the metal produced from them is wonderfully good." (Dr. D. Forbes, "Journal Iron and Steel Institute," 1874, No. I., p. 132-133.)

Dr. Riley says: "Titaniferous ores smelted in Canada have furnished an excellent pig." . . . Speaking of this same pig made in Canada from ore containing 40 to 48.50 per cent. TiO_2 and only 33 to 34 per cent. iron, he says: . . . "He (Dr. Riley) could give an analysis of this pig. He was quite ready to admit that it was splendid iron, everything that could be desired, only it cost too much money." The leanness of the ore and the amount of gangue speak for themselves on this respect. (Dr. Riley, "Iron and Steel Institute," Annual Meeting, 1894, London. Complete report reproduced by the "Ironmonger," No. 1,068, Vol. LXVII., May 5th, 1894, p. 220.)

The views of Herr Dellvick on this subject will, no doubt, be of interest. He says: "As regards the per cent. of titanic acid in an ore it is as yet a moot point whether it ought to be considered a good or a bad element. It is certain that it does not communicate any impurities to the pig. On the other hand it may be contended that, although the titanium in the ores does not, with smelting, enter into the pig but remains in the slag in an oxidized condition, it yet communicates to the iron an unusual degree of toughness and causes sulphur and possibly phosphorus also to go in the slag. That which may be charged against the iron is that it causes an increase of coal consmption in the furnace." (Dr. Hett Dellrick, p. 218, "Iron Monger," quoted above, 1894.)

As to the increase in coal consumed, it is not in our province to discuss it here. At any rate, all these statements in regard to coal or fuel have reference, as it can be ascertained, to ores containing but 35 per cent. of iron or thereabout, not a very good example to quote for comparison for economy with rich ores. Speaking of discrepancies in the determination of iron in Bessemer pig, Dr. Riley has said:

. . . . "That was mainly due to the fact that titanium was always present in fair amount up to 1 per cent., but rarely above, in the Bessemer or Cleveland pig." (Dr. Riley, "Journal Iron and Steel Institute," p. 190, 1880.)

. . . "The Cleveland ores contained a good deal of titanium white, in the Northamptonshire ores they could find it most readily in the cinders and he did not see why it would not have the (good) effect Dr. Forbes attributed to it." (Dr. Riley, Ibidem, p. 132.)

In a paper on the "Metallurgy of Titanium" ("Proceedings" American Institute of Mining Engineers, Vol. XI, p. 159), Mr. Wm. Bowron, the chemist in charge of the Norton Furnaces alluded to above, "in which they smelted without mixture," "titaniferous ores from Norway containing on an average 40 per cent. of titanic acid and 35 per cent. iron," Mr. Bowron says:

"For ordinary use of foundry the pig is unsuitable; but for making a forge iron which has brought double the market price of common iron for use as a mixture to impart the property of cold toughness to other irons or for making an iron to be mixed with other irons that are not up to the requirements for boiler plates, blooms, or for an extra good iron generally, these ores are most valuable."

Prof. Emmons, New York State Geologist, in his "Report" of 1840, speaks of the immense deposits of titaniferous ores of the Adirondacks and of their smelting, for a period of 20 years up to 1858, in blast furnaces, in the wilderness. He says:

"The iron made from these ores has proved to be of first quality. Probably no ore in the country or elsewhere has produced better iron than the vein now in consideration. The iron there made was remarkable for its hardness, toughness and tenacity; it, in fact, produced steel of the best quality, well adapted where there is much wear and friction and, at the same time great tenacity is required."

The steel manufactured at Jersey City (Gautier Steel Works) from the Adirondack pig iron, by the Adirondack Iron and Steel Company in 1848 and after, was used at the United States Navy Yard at Washington and at the Springfield, Mass., Armory, and the reports from the commanders of these yards (reports which we have on hand, duly authenticated), mention the "superiority" of this steel over any other imported, or its equality with the highest brands used, stating "that it is best adapted for cold chisels, turning tools for turning very hard chill rolls, not wasting, and standing the heaviest blows of a hammer when used as drills."

The steel and iron made by this Adirondack Iron and Steel Company from the metal from these titaniferous Adirondack ores received a prize medal at the World's Fair in England in 1851, as appears from the official letter (in our possession), written to the agent of the company.

Dr. R. W. Raymond, at the Baltimore meeting (1892) of the American Institute of Mining Engineers, said: "The quality of the pig produced from titaniferous ores mixtures is, so far as my experience goes, exceptionally good."

As to our personal experience on this subject, we may be allowed to say that tests made in foundries in Jersey City, New York and Buffalo, have shown that, by the addition of proper quantities of titaniferous pig, obtained by us by our treatment of these ores in the blast furnace, to foundry pig or to mixtures for car wheels, we have obtained: Increases in the cross-breaking loads of bars, 1 by 1 by 12 in. between supports, of 25 per cent., with deflections at center increased from 25 to 50 per cent.; and tensile strength, on round bars, increased from 35 to 66 per cent., according to the original non-titaniferous pig from which we started as term of comparison. Wheels were made from same mixtures with similar results. As to chill, the increase reached on chill pieces 25 to 40 per cent. more, and even 60 per cent. and more, according to quantities of titaniferous pig added and character of the original pig mixture used. These figures are the results of tests made on hundreds of bars, round and square, and we intend to publish them in detail.

In short, it seems to us that, before an array of opinions from such authorities as those we have quoted (ourselves excluded, of course), the assertion that "pig iron containing titanium has a bad reputation" is not justified. Being, when obtained from ores exclusively titaniferous ores and high in TiO_2, a forge iron, it cannot be expected to have the properties of foundry iron; but valuable as it has proved to be for mixtures for castings of all sorts and as a means to improve other foundry irons, its reputation should not be impaired or impugned. When the ores are not highly titaniferous ores, like the Cleveland and Northamptonshire ores, the pig metal obtained from such ores has, however, proved to be one of the best "foundry irons," a Bessemer pig, and contained as much as 1 per cent. titanium.

As to the other part of your answer referring to me, it strikes me I am rather misquoted, to some extent at least. Believing as I do with others, and as my tests for car wheels, chill castings in general, and with foundry pigs as well, that the addition, in certain quantities, of titaniferous pig (that is of pig not necessarily containing titanium, or, if so, but small percentages, but made from titaniferous ores or from mixtures of titaniferous ores and other ores), improves the qualities of the metal, as strength, tenacity, hardness and properties of chill, as the case might be, I have proposed to smelt titaniferous ores in connection with such phosphoric ores as are not high enough in phosphorus to yield a basic or phosphoric pig, though too high to yield a good foundry pig; thus obtaining a pig metal which, though containing a large amount of phosphorus, would still prove an excellent foundry pig. I have not smelted such mixtures on a large scale, but from their smelting on a reduced scale or from the addition to phosphoric pig of titaniferous pig, I have obtained a metal possessing all the qualities of a good foundry pig not phosphoric.

Auguste J. Rossi.

New York, Feb. 10, 1900.

THE MOUNTAIN LION MINE, REPUBLIC, WASHINGTON.

Written for the Engineering and Mining Journal by M. H. Joseph.

The Mountain Lion ranks next to the Republic as one of the great mines of the Eureka Mining District, Washington. Whether it will justify such distinction, will be told later on, by its exploration and milling results. That it is a valuable mine will not be doubted by any practical mining man who examines it. The property embraces 6 mining claims, the group consisting of the Mountain Lion, Flat Iron, Last Chance, Navahoe, Zeta and Mountain Lion fraction and improvements —the latter embracing the buildings for a mill and hoist, a compressor plant, blacksmith shop, assay office and storeroom; a boarding and bunk houses and a residence for the officers of the company. The machinery for the mill and hoist has been several weeks in transit, delayed by bad roads, but portions of it are on the ground and the balance will soon be delivered, ready for installation.

The claims cover 3 separate parallel northerly and southerly veins, the principal being the center one, which is traceable at the surface by a wide outcrop for a distance of 800 feet or more. The center and west veins are covered by the Mountain Lion and Last Chance claims, and the latter has a good surface showing. The east vein dips rather flatly to the eastward and is covered by the Flat Iron claim. Each of the claims were prospected at the surface and gave such satisfaction as to warrant deeper exploration. An incline shaft was sunk 60 ft. at the discovery point on the center vein, and a trench, 2 or 3 ft. deep, was cut across it, showing a surface width of 28 ft. From these openings samples were taken which returned assay values of $5 to $25 in gold per ton.

MILL, HOIST AND TRAMWAY, MOUNTAIN LION MINE, WASHINGTON.

About 80 ft. west of this the west vein was cross-cut by a trench, exposing it 25 ft. in width, and an average sample gave an assay value of $5.16 in gold per ton. From several other samples the highest assay value returned was $18.58 per ton.

The Mountain Lion claim was located by Arthur Best, March 20th, 1896, and the Flat Iron, Fraction and Last Chance claims were located by George Rennels and J. Bell September 7th of the same year. W. H. Brown, a practical miner and mine manager of many years' experience in the Northwest, readily recognized their merit and purchased them for $1,000. He interested the Jonathan Bourne syndicate of Portland, Oregon, with whom he had been formerly associated in mining ventures. The surface developments having justified an extended line of exploration, a tunnel was started eastward, above the bed of the Granite Creek, which intersected the west vein, 8 ft. in width, at a distance of 765 ft. from the portal. It stands almost vertical, with a slight easterly dip and a general north and south course. From a number of samples taken during the cross-cutting, the vein filling gave an average assay value of $10 or $11 per ton, principally in gold. At a distance of 30 ft. further in the center vein was encountered, which, at the intersection was 26 ft. in width. It was repeatedly and carefully sampled, and showed average values, in 3-ft. cross-cut sections, of $14 to $86 per ton. This brings the history of the mine up to March, 1899, and Mr. Brown then began talking of a mill to be built on the ground. For the purpose of having tests made of the ore and its metallurgical requirements, a number of milling samples were shipped to Butte and Marysville, Montana, Denver, Colorado, and San Francisco, California.

Up to September, 1898, the mine had been developed at the private expense of Messrs. Jonathan Bourne and W. H. Brown, but during that month it was incorporated under the style of the Mountain Lion Gold Mining Company, with a nominal capital of $1,500,000, divided into 1,500,000 shares, at a par value of $1. Portland, Oregon, is the principal place of business. The directors are Jonathan Bourne, president; L. E. Bourne, vice-president, and W. H. Brown. The latter was appointed the manager, but, on account of ill health was shortly succeeded by Mr. J. S. Wyatt, the secretary and treasurer of the company. Of the entire capital, 300,000 shares were placed in the company's treasury, of which a block was sold for the purpose of providing a fund for the purchase of compressor, hoisting and milling plants and expediting the exploitation of the mine. The first shares offered were sold at 75c.; the next lot realized $1.10 to $1.15 per share, at which figures the largest number of shares were sold. The price afterward rapidly rose to $1.60 per share, at which the remaining treasury stock—175,000 shares—is now held. Only 8,000 to 10,000 shares are floating on the open market, the balance being closely held as an investment.

The compressor plant was the first provided, and the drills were in operation by March 18th, 1899. This plant comprises the first half of a 14-drill duplex Rand drill compressor, a 100 H. P. boiler and 6 drills, covered by a 28 by 64 ft. building. With the power drills in motion systematic and rapid exploration was begun.

The tunnel is now in 1,260 ft., but has not yet reached the east vein. It is substantially timbered all the way in, with the exception of a point where it passed through 70 ft. of hard porphyrite. The center or main vein has been opened by a drift southward 460 ft. and another northward 40 ft. It strikes northerly and southerly and dips 85° westward. The north drift is 10 ft. wide and was driven in solid, clean white quartz of the value of $16 to $20 per ton, showing the foot, but not the hanging wall. Going south the pay shoot has been developed 16 ft. and the entire body of quartz 26 ft. in width, with quartz still remaining in places on the hanging wall. The south drift has been heavily timbered and the pay shoot made ready for stoping for 300 ft. in length. At the south end of the drift, where it was in only 400 ft., an upraise was carried up with the vein and connected with the bottom of the incline shaft, which was sunk at the point of discovery, and through it the mine was ventilated and the dip of the vein ascertained. The timbers across the main stope will average 16 ft. in length, the longest being 23 ft. and the shortest 9 ft. 7 in. The material removed to admit of their setting was all clean payable ore. The quartz of this vein will average in value, so far as it has been developed, $22 per ton. It is of the same general character as the quartz of the Republic and other veins of the camp, except that it is generally harder. It is mainly either pure white, or of a banded structure, with variously shaded striping. It runs from 94 to 98 per cent. silica.

The west vein has been opened by a drift running northward from the tunnel 380 ft., all the way in clean white quartz of an average width of 10 ft. The center and west veins have an average depth on the tunnel level of about 310 ft. The center vein has a depth of 360 ft. at the discovery shaft and 260 ft. at the north end of the ground, where the hill slopes toward Granite Creek.

During last September a double compartment shaft was constructed, by raising from the adit (tunnel) level 304 ft. to the surface. Each compartment is 4½ by 5 ft. in the clear. At 35 ft. below the surface the west vein was encountered, dipping about 70° east. The shaft is

substantially timbered all through with 12 by 12 in. timbers, in square sets, 5 ft. apart from center to center. It is situated on the south side of the tunnel, with which it is connected by a station 22 ft. long, 16 ft. wide and 12 ft. high, and is 60 ft. west of the center vein. At 35 ft. below the surface it encountered the west vein, dipping 70° eastward. Since its completion a winze has been sunk on the west vein to 125 ft. below the adit level, and a drift has been run 50 ft. on that vein. Thence a cross-cut has been carried 60 ft. to a point under the shaft, and an upraise connects both levels, making the shaft 429 ft. deep. The ore from the winze and lower drift averages $25 per ton.

The mill building is an excellent structure and when equipped with machinery and tanks will have a capacity to treat 100 tons of ore per day. When running under full headway about 50 men will be required for the mine and mill, divided into 2 shifts per day.

The Mountain Lion has an ore body substantially blocked out on the main vein 440 ft. in length, 16 to 26 ft. wide, averaging 310 ft. deep to the tunnel level, and to what depth below has yet to be learned. Another pay shoot has been substantially proved on the west vein 360 ft. in length and 10 ft. in width, but its full depth has yet to be ascertained. The manager calculates that he has ore reserves blocked out equal to 600 ft. long, 16 ft. wide and 310 ft. deep, that will go to the mill with a better average value than $20 per ton. In the main vein is a body of ore that will run $100 per ton in gold and silver, the former being in the proportion of 1 to 2 of the latter. The country formation cut by the tunnel consists of hard and soft cretaceous porphyrites.

The hoist and mill buildings are completed, ready to receive the machinery, and the tanks are already set up. The mill structure is 185 ft. long and 106 ft. wide, with heights of 40 ft. in the crushing and 28 ft. in the tank department. The hoist-house is 30 ft. wide, 40 ft. long and 30 ft. high. The gallows frame stands 56 ft. high above the collar of the shaft and is inclosed above the main building by a square tower, 62 ft. in height.

The treatment of the ore will combine plate amalgamation and plain cyaniding. The mill equipment will consist of 2 storage, 8 percolating or filtering, 2 sump and 5 agitating tanks, all of steel; 3 Fraser & Chalmers boilers 100 H. P. and a 125 H. P. Bates Corliss steam engine. The mine and mill will be lighted by electricity, and electric power will be used for hoisting and pumping at the mine. A 125 H. P. Ide engine will be used to generate electric power in the mill building, drawing water from Mud Lake, distant 2,000 ft. southward from the mill. A 20 H. P. motor will be used to raise the water from the lake 40 ft. and discharge it into a 12 by 18 by 20 ft. tank, whence it will be flumed around the hill by gravity, to another tank of the same size. The power for the hoist, pump and lighting will be generated by a 125 H. P. 3-phase General Electric Power Company's generator. Wood and water in the neighborhood are practically inexhaustible. A 75 H. P. General Electric Company's motor will be used at the main shaft, by which the ore will be raised in a self-dumping skip and automatically dropped onto a grizzly, the coarse passing over it to a Blake 9 by 15 rock crusher and thence, with the finer material, into an ore bin of 200 tons holding capacity. The ore will be automatically handled from the moment it leaves the mine until delivered into the tanks at the mill. It will be run in self-dumping cars 400 ft. over an automatic tramway and dumped into a 500-ton receiving bin at the mill. It will pass thence through an automatic feeder to the battery, where it will be crushed by 20 steel stamps 1,200 lbs. each, which will have 6 to 7 in. drop; crushing the ore 30 mesh fine. The capacity of the mill will be 100 tons and that of the tank 120 tons per day. The pulp will pass from the battery to amalgamated copper plates, which will take up the coarse gold. It will then be carried to Huntington mills 5 ft. to be reground. Each mill will have capacity to take the pulp from 5 of the battery stamps and reduce it to 60 or 80 mesh fine. The pulp will pass from the mills into the agitating tanks, charged with a cyanide solution, 0.50 per cent., and will require 7 hours for the process of leaching. These tanks will have each 30 tons capacity, and the agitation wil be affected by blades of the propeller type. The pulp will pass next into 8 filtering tanks, each 24 ft. in diameter and 6 ft. deep, and will be charged with a 0.25 per cent. cyanide solution. The filtering will require 24 hours, the solution afterward going to 2 zinc boxes for precipitation. Each box will have 16 compartments 24 in. long, 16 in. wide and 20 in. deep. In these the solution will be precipitated on zinc shavings, and afterward treated in the usual way.

The tailings from the filtering tanks will be washed out to free them of cyanide, the reduced solution from which will be discharged into 2 sump tanks and thence carried back to 2 storage solution tanks, where it will be restandardized and used again.

Manager Wyatt, to whose courtesy the writer is indebted for much of the foregoing information, expects the extraction of the precious metals to run from 85 to 95 per cent. Breaking and hoisting the ore and delivering it into the mill, he estimates, will cost 75c. and the treatment $2.25 to $2.50 per ton, producing the bullion at a cost not to exceed $3.50 net per ton. This is exclusive of exploration work.

ABSTRACTS OF OFFICIAL REPORTS.

Quincy Mining Company, Michigan.

The report of this company covers the year ending December 31st, 1899. It is remarkable for the improvement shown in earnings, chiefly because of the high price of copper, and for the reduction in the percentage of copper obtained. The earnings and expenses for the year are shown in the following table:

	Total.	Cts. per lb.
Receipts for copper sold	$2,450,179	17.13
Running expenses at mine	$969,741	6.78
Construction	404,481	2.83
Taxes in Michigan	40,117	0.28
Smelting, transportation, etc.	153,752	1.07
Total expenses	$1,568,091	10.96
Mining profit	$882,088	6.17
Add interest and real estate	46,579	0.32
Total net income	$928,667	6.49

The balance, January 1st, 1899, was $1,229,275, which, added to the net profit above, gives a total of $2,157,942. Dividends paid amounted to $950,000, or 38 per cent. on the stock, leaving a balance, December 31st, of $1,207,942. The statement of assets shows: Cash and copper, $846,072; accounts receivable, $256,660; supplies and accounts at mine, $279,351; total, $1,382,083. The liabilities, consisting of outstanding drafts and accounts, were $174,141; leaving a balance of assets amounting to $1,207,942, as above.

The total rock mined last year was 602,409 tons; rock hoisted, 586,820 tons; rock stamped, 559,164 tons. Of the rock mined 43,245 tons or 7.2 per cent. was waste, rejected before stamping. From the rock stamped there was saved 17,866,680 lbs. mineral, from which there was obtained 14,301,182 lbs. refined copper; the yield of copper being thus 1.28 per cent. from the rock stamped. The average return was 25.6 lbs. of copper per ton stamped; the gross return being $4.39 and the total profit $1.66 per ton stamped. The average yield per fathom of ground broken was 534 lbs. mineral, or 427 lbs. refined copper. The cost of stamping per ton was 22.19c.; other costs, 151.24c.; total running costs at mine, 173.43c. per ton stamped. The average force employed was 1,355 men, of whom 401 were miners. The average wages earned by miners on contract were $56.72 per month. In 1898 the average yield of copper from the rock stamped was 1.50 per cent. The reduction in 1899 was 0.22 per cent., a considerable change, for which no reason is given.

The report of Agent S. B. Harris shows a great deal of work done on new shafts, hoisting machinery, pumps and the new stamp mill. In the latter a steel building 132 by 216 ft. has been put up, and three heads of steam stamps will be ready early in the spring. New boilers and air compressors have been put in, and progress made in other work which will enable the company to increase its producing capacity.

The usual quantity of development work—shaft sinking and drifting—was done, and some good copper ground has been discovered. The lower levels showed a better character of lode than has been the case for some time past. It is believed that in a short time the mine will be able to supply the new stamp mill with plenty of rock.

St. Mary's Canal Mineral Land Company, Michigan.

This company's report is for the year ending December 31st, 1899. The capital stock is $1,000,000 in 20,000 shares; of these 80 are in the treasury. The real estate at the close of the year was 105,956 acres, besides the mineral rights in 7,112 acres. Sales during the year were 1,905 mineral lands at an average price of $536.36 per acre, and 410 acres other lands, at an average of $12.44. Wood and timber sales, $15,351. The company holds the following stocks: 20,000 shares Pacific Copper Company; 86 shares Baltic; 842 Winona; 80 shares Old Colony; 122 shares Tri-mountain; 25,000 shares Mayflower; 50,000 shares Champion.

Since 1863 the company has distributed $140 per share, and the following stock: One-quarter share Albany & Boston Mining Company; 1 share Tamarack, 1 share Iroquois, 1¼ share Baltic, ½ share Winona, 1 share Old Colony, 1½ shares Tri-mountain.

The total receipts, including $218,655 brought forward from 1898, were $727,985. Payments on various accounts were $71,038; dividends, $580,000; total, $651,038, leaving a balance of $76,947 cash. Additional assets were $7,001 due on land and wood contracts and $50,000 note of Tamarack Mining Company.

President Thayer says: "In the matter of sales of land the promise of the year as expressed in the last report was fully realized, and the distributions to stockholders have been the largest in the history of the company. The opening of the Copper Range Railroad brings all of our lands on the South Range within easy access and should be of great importance in their development. The railroad runs through or near the Baltic, Tri-mountain, Champion, Elm River, Wyandot and Winona properties, some of which may be expected to become permanent producers of copper. The oldest of these, the Baltic, now has a small product. Some of the others are promising, but the value of a mine at Lake Superior cannot be ascertained definitely for several years."

Newfoundland Copper Company, Limited.

This company's statement covers the period from the organization, March 8th, 1898, to September 30th, 1899. The capital stock authorized is £250,000 in £1 shares, of which 67,333 shares have been issued. The sum of £75,000 was paid for the property. During the period named the receipts were £4,621, of which £4,857 was for ore sold. The payments for mining and development work were £6,734; London expenses, £2,089.

The directors' report says that "a considerable amount of prospecting and development work has been accomplished, the net result of which is the present Sleepy Hollow mine, which has yielded results of a promising character, and although varying from time to time is now showing as well as can be expected from a miner's point of view. The other localities at which exploratory work has been carried on have now all been abandoned, and attention and energies are concentrated upon the Little Bay property on which Sleep Hollow mine is situated. This mine has been seen and inspected by three experienced experts since the date it was struck and opened in the month of July, 1898, and each has reported favorably on the prospects it offered for the production of copper, in the event of the necessary development work being carried out. It is upon this work the company is now engaged, and the property is being opened up in a thoroughly miner-like manner, and with a view to economical working as extensions progress. Upon this property we have opened five shafts, of which two have now reached a depth of 30 fathoms; levels have also been extended from same at 10, 20 and 30 fathoms. These are the Nos. 1 and 2 shafts. In the former the lode is 5 ft. wide, and offers good indications. In the No. 2 the lode is worth 2 tons copper ore per fathom. In a cross-cut north from the 20-fathom level a new lode has been discovered 6 ft. wide. The lode in the winze below the 10-fathom level is improving, and is now yielding 2½ tons copper ore per fathom. This point is opening up good ore ground. The manager has shipped 1,170 tons of copper ore to Great Britain, which has been well sold, and there is now another shipment ready as soon as a vessel can be obtained to load it. The work of the company up to this time has been entirely one of exploration and development, but it is now assuming a more definite and fixed character."

THE TRANSVAAL MINING INDUSTRY FOR THE SECOND HALF OF 1899.—I.

Special Correspondence of the Engineering and Mining Journal.

Current accounts by party interests are misleading, by omissions on the one side, by misrepresentations on the other, and afford no clear insight into the present state of the mining industry and the mines of the Transvaal. The aim of these articles is to place before the American mining community the actual state, under present conditions, of the industry. Political phases will be touched as slightly as possible, and only as far as necessary to explain their influence upon the industry.

Up to the end of June a good number of the large mining companies were continuing construction work. With the beginning of July very little new work was started, but the work in hand was continued up to the opening of the war. Where new structures were raised extra forces of men were put on, and all exposed work was hurried to completion, or, at least, to a stage where it would not be injured to any extent by storms.

To the close observer it was evident that at the approach of trouble the mines were determined to close, but they rather wished the Government to come out with some drastic move to that effect, so as to throw the odium of that action upon it. But the Government was decided, and would not do it, much to the embarrassment of the English mines.

VEIN IN TUNNEL LEVEL, MOUNTAIN LION MINE, WASHINGTON.

The English mines then made a start at closing, but only slowly and gradually; none of them closed down at once, since the Transvaal law declares that the mine which closes without a tangible reason will be appropriated by the Government. While the English section was fully convinced that the Government would not dare to carry out this law, yet none of the companies wanted to run the risk of having its mine confiscated. The work was contracted in all departments, and large numbers of men, white and black, were discharged. The idea was to close gradually and slowly, finally to keep the pumps only running for some time, and so maintain a small force, well provisioned and armed, to form a guard for the property, even, in case of necessity, to find shelter below ground, altogether in opposition to the laws of the country. Even the pumping would be stopped after a little while, as none of the companies had more coal than enough for a week's work on hand all along the Rand, and they expected the coal mines to stop work at the same time. But the Government proved to be much too strong. Up to the present day (December 23d), every coal mine in the country is running, by the mines' own staff of officers and men, and the Government exacts only a nominal supervision; the gold mines are thus deprived of the plea that they were forced to close on account of deficiency of coal.

The staff and the men (sometimes against a small deduction for rent) live on the premises of the mines, in more or less pretentious houses, cottages or rooms, which they have to furnish themselves. The grocers and trades people make their daily calls, or orders are left with them, and the goods are delivered to them at the mines. As a rule, the married folk pay once a month—after pay day, of course. The better men are mostly engaged by the month, and both parties give a month's notice. At that time the mines shortened the monthly engagements to two weeks, and some time later to three days, with the proviso that also within those three days the married people, as well as the single ones, should vacate their dwellings. At first the men attempted to remonstrate, but it was of no use.

At the same time, all along the reef at the premises of the mines, at various parks, political meetings were convened, fiery speeches were made, strong resolutions signed by all, as the attendance and signing was compulsory, default causing immediate discharge by the company. The great mass of workmen were heartily sick and disgusted at these performances. This movement failed altogether, as even the Government would not take any notice of it.

The better class of workmen saw at once that they had no support from the mines, and they were never inclined to take a hand in politics or war.

Great numbers of these men, especially married men, sent in notices that they would leave, which were accepted. All these men propose to come back again some time. They could not sell their goods, furniture, etc., as there was no market; neither could they take them away; so they left them. Their rooms and cottages are exactly as if the owner had only stepped outside for a couple of hours. For some highly prized pieces of furniture, bicycles, etc., they looked around for some special hiding place, which was found, as a rule, under the floors. At a few mines, worked directly under Government control, the dwelling houses and rooms were required by the new staff and workmen, and in these carpenters, by the manager's orders, opened the dwellings and hidden pieces were placed in the rooms to which they belonged; only rifles, ammunition and provisions were, according to law, appropriated by the Government. The new men are now quartered there comfortably. At all the other mines things were left as when the last owners turned the keys and went away.

Some of the mines, while the managers and part of the staff were yet present, had provided for a police to protect the premises day and night. The mines paid them 15s. a day and board; but as these were only a few individual mines, and the whole area of the Rand required protection, the Government has established a police, with three headquarters—one for the central part of the Rand, in Johannesburg; one for the eastern part, in Boksburg, and one for the western part, in Krugersdorp. This police has no access to the buildings, but is charged with guarding the property against thieves and burglars. They are provided with horses, and are well armed; and as we live under martial law, and no civilian has access to the mine grounds, by day or night, without special written permit, the whole Rand is well patrolled. The men of the mine police receive only 10s. per day, and have to provide for their own food. The former police was dismissed. At the time when the best class of employees at the mines left in such great numbers, Mr. James Hay, one of the most energetic and prominent mine directors, wrote to Mr. Reitz, the Secretary of State, pointing out this fact and stating that if the Government wished to see the gold mines on the Rand running, something would have to be done to stop the great exodus of white and black workmen. The same day Mr. Reitz published an order that all the remaining workmen at the mines would be protected as long as they obeyed the general laws of the country, and that each one would be furnished with a permit to stay; and in consequence of that many stayed and are here to-day.

Every item of information contained in this report is well known

to the Government and to all the people. Nothing is intentionally covered up, no secret is hidden; the intention is simply to bring before the readers the facts concerning the mining industry.

It is to be regretted that from the English side everything has been done to increase the race hatred between English and Dutch Afrikanders, British civilians who have resided in South Africa have gone out of their way to support Great Britain by arms and money; this has been done by the English mining industry of the Rand, directly and indirectly.

There is no question, as far as the principle is concerned, that every man is entitled to take up arms in defense of his native country; but it is questionable policy for Englishmen who have lived here for years, many of whom have made great fortunes, and who intend to live here again, to lend their arms and fortune to Great Britain to crush a small nation. England is here on the battlefields in great force, and has called upon her colonies, and Australia, New Zealand, Canada have sent their troops against the Transvaal and the Orange Free State. The Boers all believe it simply means a war of extermination, and it will be all the more difficult to conclude peace.

There were not less than 150 to 160 working gold mines on the Rand, and to-day there are five of them working with more or less of their own old staff and workmen. All these mines have a numerous staff of managers and sub-managers, clerks, storekeepers, foremen, engineers, craftsmen, etc. Then, again, there are many commercial houses, formerly with many clerks, but now either closed or with reduced forces.

The companies and employers were quite willing to employ those young men again after the war, and the latter desired to resume then their former positions, as is right and fair; but now both parties have agreed and consented that the young men should, furnished with free fares, drop out quietly, make their way to Maritzburg, the capital of Natal, and be enrolled in one of the British auxiliary forces—prominently in the "Imperial Light Horse" (consisting altogether of Rand men)—and thus with the British forces fight their way back to the Transvaal. This force has been equipped and is maintained by the subscriptions of mining companies and commercial houses on the Rand, the directors and managers of which are at present in Durban, Cape Town, etc. The loss of life among those auxiliary Rand forces is especially great; the Boers' feeling is very bitter toward them and those who furnish the money—all made in the Transvaal.

The English section here looked at the whole war as an easy walkover, and those young men considered it merely as a holiday excursion and a pleasant recreation. Some receive their salary for the time absent from the mine companies. Other young men went to join those forces on their own account, considering that it will be greatly in their favor on seeking employment here again.

Most of the mines here did, day by day, less and less, barely keeping up steam to make a show of pumping. At the same time the bakers had been kept busy, working day and night on biscuits, for which they received orders from the mines for more tons than they were able to furnish, which, with other provisions, were, although against the law, packed away below ground. The information of the declaration of war we received here late in the evening of October 14th, 1899. The following day martial law was proclaimed. The Government's next step was to secure a number of gold mines for the production of gold, promising the shareholders full payment of dividends after the war, after paying the current expenses during the war. They did not touch the mines of companies in which English capital simply was invested, as those of the Consolidated Goldfields of South Africa, the group of mines at Randfontein (of J. B. Robinson) and others.

The working mines were now divided into two classes, viz.:

1. Mines worked under Government supervision, but as far as possible by the companies' own regular staff and workmen.—To this class belong the Village Main, the Wemmer, the Ferreira (as the manager had left, a Transvaal mine inspector, Mr. Walker, had been appointed as manager) the Worcester and the Pioneer.

The directors of these companies had all consented to this arrangement, and each of these mines has been kept fully up—and sometimes more—to the usual production of gold. All these mines are quite close to town and are unquestionably rich mines.

2. Mines worked under direct Government control with Transvaal Government mining engineers as managers, with an entirely new staff. To this class belong the Robinson (I. H. Munnik, acting State Government Mining Engineer, as manager); the Bonanza (F. C. Osterloh, a Transvaal mining engineer, as manager); the Ferreira Deep (E. Kunhmunch, a Transvaal Government mine inspector as manager); the Rose Deep (G. Kubale, a Transvaal Government mine inspector, as manager) and the Langlaagte Deep (with Mr. F. W. Tucker, Transvaaler, as acting general manager). These are also all of them rich and large mines.

This makes altogether 10 rich gold mines. The Robinson, Bonanza and Ferreira Deep are close to town, the Langlaagte Deep is a little further out from the Bonanza, and the Rose Deep is near Elandsfontein Station, on the East Rand. A good number of gold bars from these mines have been forwarded to the Transvaal Government Mint at Pretoria, where the coining of Transvaal sovereigns is progressing with a largely increased staff and workmen.

I am personally acquainted with some of the Cornish miners of the first mentioned five mines, who have been there for years and are now there. They received their permits to stay much easier than we in town; the permits were brought to them. They tell me that everything goes as smoothly as usual. Regarding the output, they tell me that since the beginning of the war the work in all departments is rather more pushed than before, and that consequently more gold is produced.

At the second class of mines matters did not go so smoothly from the beginning, from various causes.

After Mr. Munnik got the Robinson Mine and mill fairly in working order, he started up the foundry and machine shop, as he saw it was necessary to give a helping hand to those mines which were short on pumps. While all the mines were at work there was no trouble from water, but as the greater number did no pumping now, those working found more water in their shafts, coming from the other mines. Since the starting of the second and third row of mines some years ago, the outcrop mines have done no pumping at all, as all the water from these mines finds its way to the deeper levels. Although in many cases a wall of rock 40 ft. thick is left standing at the bottom of the inclined shaft of the outcrop mine it forms no barrier to the water, which follows the deeper levels and is also spreading laterally. The works were run for the benefit of mines "where the necessary number of European shareholders is involved." Europeans in this case means from the Continent of Europe, excluding England.

The location of the majority of shareholders, therefore decided, if any respective mine would be classed as an English or non-English mine or company.

Later in the month the here attached notice appeared in the daily press, and I give it herewith:

"Notice.—In connection with the request of certain mining companies, in which French and Germans are much interested, to effect the pumping of water, I give herewith notice that, according to the Minister of the Executive Council, it has been agreed to furnish pumps by the Government to the following companies: Salisbury, City & Suburban, Champ d'Or, West Rand Mines, Violet Consolidated, Lancaster, Lancaster West, Roodepoort United Main Reef, Princess Estate, Roodepoort Central Deep, Bantjes Consolidated, Meyer & Charlton, New Goch, Geldenhuis Estate, May Consolidated, Glencairn, Rietfontein Colliery, Springs (Transvaal Coal Trust), French Rand, Durban Roodepoort Deep, Main Reef Consolidated, Paarl Central, Langlaagte Estate, Crown Deep, Jubilee, Henry Nourse, Jumpers Deep, New Kleinfontein, New Modderfontein, New Primrose, Van Ryn's Gold Mines Estate.

"Further, it is commanded that the representatives of the companies not mentioned above herewith remove, before or up to December 1st, 1899, all their white and colored workmen, from the no more working mines, to the respective standsdorpen (towns or villages) which they choose as residence, and in default thereof they will be severely dealt with according to law.

"(Signed) S. E. Schulte,

"Special Commandant and Chairman of the Commission on Pumps.

"Johannesburg, November 29th, 1899."

(To be Continued.)

THE MAGNESITE INDUSTRY.

Written for the Engineering and Mining Journal by Solon J. Vlasto.

During the past 10 years magnesite has become a commodity of commercial importance, as is shown by the increased uses to which it is being put. Perhaps the larger consumption is in the steel industry, where bricks made from calcined magnesite are used for lining furnaces and converters. Magnesite bricks of high grade are composed of 94 to 95 per cent. carbonate of magnesia; they are refractory and last longer than any others. The cement manufacturers are also lining their kilns with these bricks, and the use of magnesite as a refractory material is growing more rapidly than any other application of the mineral. These bricks, besides being imported from Greece, are being manufactured in America, from imported magnesite, by the Fayette Manufacturing Company, at Layton, on the banks of the Youghiogheny, in Fayette County, Pa. (see "Engineering and Mining Journal," October 21st, 1899), and by the Harbison & Walker Company of Pittsburg, Pa. In the manufacture of these bricks in this country some difficulty is experienced in making a uniform brick such as is produced in Greece, where the industry originated some years ago. These imported bricks are worth $170 per thousand ex-ship at New York, Philadelphia or Baltimore.

There are a number of other uses for magnesite—in the manufacture of carbonic acid gas, epsom and glauber salts, for filling wall paper, and as a fire-proofing material. The latter use is being extended, and a factory for making cement out of magnesite has only recently been established in New York. Some months ago patents were taken out in this country for the manufacture of "alkali-magnesite," which contains about 75 per cent. magnesite. This material is applicable to the manufacture of window sashes and other inside decorations for buildings, making the same fire proof. In the making of carbonic acid gas there are two methods; one is by burning magnesite and collecting the gas, and the other by treating the crude mineral with sulphuric acid. In the former the calcined by-product is used in the manufacture of fire-bricks, and in the latter case the residue is utilized in making epsom and glauber salts. Carbonic acid made from magnesite is superior to that made from marble dust or any other mineral, especially where an absolutely pure liquefied gas is desired for carbonating waters, beer and other substances. The demand for magnesite for making carbonic acid is steadily increasing.

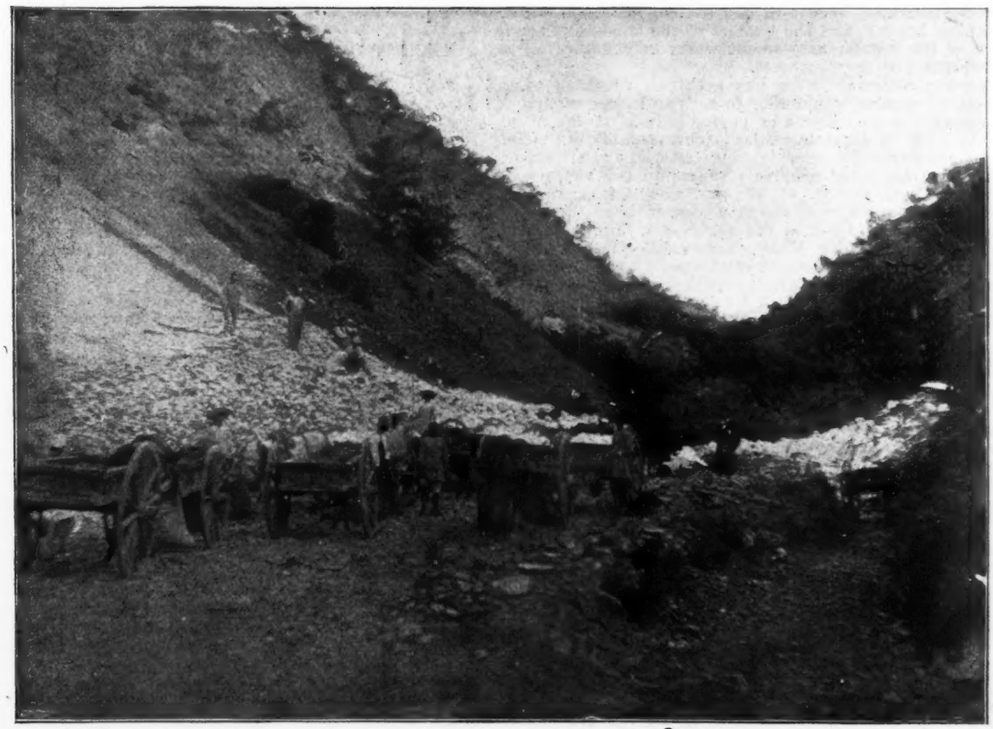
In Greece the production of magnesite is in a few hands, and the largest properties are being operated by the Societe des Travaux Publiques et Communaux of Athens, which has a paid-in capital of $1,000,000; it is represented in America by the writer. The deposits of mineral owned by this and other companies are on the island of Euboea, on the eastern coast of Greece, also near Corinth. The accompanying photographs will give some idea as to the formation of these deposits and the method of loading, preparatory to sending the magnesite to market. The method of working the mines is much like quarrying, and is rather primitive, an ordinary pick and shovel being practically the only implements used. The mineral is brittle, its hardness being 3½ to 4½, and the deposits can be easily worked. The magnesite occurs in small hills which bear little vegetation and only scattered clumps of pine trees. The mines are situated on the top and sides of these hills and are worked on the open-cut system. As the rock is broken in the mine it is thrown to the surface, where the magnesite is sorted out and shovelled down the hill to the dumps. Here it is loaded by laborers into small two-wheeled wagons and drawn by them to a narrow-gauge gravity railway, where the magnesite is put into cars carrying about 1 ton

each, and sent forward to the shipping port. Arriving there, the mineral is put on lighters, which load it on the steamer. These steamers are usually chartered for their full capacity, and the freight rate to the Atlantic ports of the United States is about $2.50 per ton.

MAGNESITE FORMATION, NEAR ST. THEODORE, GREECE.

The production of crude magnesite in Greece in 1899 is estimated at 30,000 to 35,000 long tons, and of this amount about 20,000 tons were shipped to the United States. This product contains nearly 97 per cent. carbonate of magnesia with bare traces of iron, and not more than 0.04 per cent. silica. The cost of producing the mineral is about $3.50 per ton, and the transportation charge to St. Theodore or Kymassi—the seaports—is about $1, making $4.50 in all. The selling price of crude magnesite ex-ship New York, Philadelphia or Baltimore, is $7 to $7.50 per long ton in bulk, in wholesale quantities.

An important branch of the industry in Greece is the manufacture of calcined magnesite and of bricks. About 15 years ago the first works were established at Kymassi, and these have since been improved to meet an increasing demand. The output of calcined magnesite is estimated at 5,000 short tons annually, and the output of bricks at about 1,000 tons. The bricks are consumed mostly in Europe, only a few hundred tons going to the United States. Calcined magnesite is worth $16.50 per short ton, net cash, in bags, f. o. b. cars in New York, Philadelphia or Baltimore. This product has been burnt in furnaces at a temperature of 800° to 1,000° C., contains barely 2 per cent. carbonic acid, and runs from 94 to 95 per cent. carbonate of magnesia. There is no duty on magnesite imported into the United States. The number of people engaged in the magnesite industry of Greece is about 1,000, and the average rate of wages for labor is 50 or 60c. per day of eight hours. There are no labor unions in that section and the work-



LOADING MAGNESITE FOR SHIPMENT.

men are apparently well satisfied with their life. They live in small one-story houses in the vicinity of the mines, where the necessaries of life are cheap.

Aside from Greece there are extensive magnesite mines in Styria, Austria, at Minsan in Hungary, and near Frankenstein in Silesia. The Styrian deposits are practically in the hands of two concerns, the leading factory being at Mittendorf, near Veitsch. Here successful work has been done for the last 10 or 12 years. A fair quantity of the production has been shipped to the United States, mostly in a calcined form. The Minsan deposits of Hungary are situated near the Tolsvar railway station, and are controlled by the Ungarische Actiengesellschaft fur Magnesit Producte of Budapest. This mineral contains 94.8 per cent. carbonate of magnesia, 0.1 per cent. carbonate of lime, 3.2 per cent. oxide of iron, 1.1 per cent. alumina, and 0.8 per cent. silica. On the other hand the Styrian product is said to carry 88 per cent. carbonate of magnesia, nearly 4 per cent. oxide of iron, and 4 per cent. silica. The Hungarian calcined product is shipped chiefly from Fiume.

In Germany the mines are located near Frankenstein in Silesia. Some years ago the Deutsche Magnesit Werke constructed works near its mines for calcining magnesite to make into bricks, as well as tiles for roofing, flooring and other purposes where a fire-proof material is required. At latest accounts the crude magnesite production in that country has been consumed principally in the manufacture of carbonic acid. The total yearly output from the Frankenstein deposits is not far from 5,000 metric tons crude. The mineral assays from 46 to 48 per cent. magnesia, 0.6 to 0.7 per cent. carbonate of lime, 1.5 per cent. oxide of iron and alumina, 4.5 to 5.25 per cent. silica, and from 46 to 50 per cent. carbonic acid. The crude magnesite ex-ship New York is quoted at $12 per long ton.

Some deposits have also been found in other countries than those named, but the supply is not large enough or else too far from a shipping port to be of any commercial importance.

In the United States the principal magnesite mines were opened in California, where the product has been calcined and made into bricks. There much difficulty is encountered with transportation, and in past years the entire production has been consumed on the Pacific Coast.

BRITISH COLUMBIA.—XXVI.

MINING DEVELOPMENT ON VANCOUVER ISLAND IN 1899.

Special Report of W. M. Brewer, Traveling Correspondent.

In November, 1898, the writer made his first trip up the West Coast of Vancouver Island, to examine some prospects. At that time the only camps at which any considerable work had been performed in developing mineral claims, were the Alberni, at the head of Alberni Canal, and Seechart or Anderson's Camp near the entrance of Barclay Sound. Above these points, prospecting had been carried on for about two years in the vicinity of Clayoquot Sound, Tofino Inlet, Bedwell Sound, Hesquit Harbor, Sydney Inlet, Kyuquot Sound and Quatsino Sound. Assessment work only, though, had been performed on the mineral claims discovered near these locations, except in one or two instances where the properties had been bonded, and the holders of the bonds had spent more than the cost of the regular assessment work, in endeavoring to determine the possibilities of the prospects.

During the past year, although there has not been as much work performed as interested parties would like to see, or indeed sufficient to determine absolutely the occurrence of paying mines on the West Coast, yet there has been in some localities a considerable outlay of capital for development purposes. For instance at San Juan Harbor, probably $3,000 has been expended near salt water; in the vicinity of Alberni, at the Golden Eagle, the W. W. W., at Hayes' Camp, McConnell's Camp, and on the Lake Shore Group at Anderson Lake there has probably been about $20,000 paid out in the aggregate; in the vicinity of Clayoquot Sound, including Elk River, Tofino Inlet and Bedwell Sound, there must have been a total amount of at least $40,000 expended; the expenditure on Quatsino Sound will probably reach $15,000 and around Kyuquot Sound and Sydney Inlet about $2,000 will probably represent the amount actually spent up to the end of November, since last January.

While it cannot be claimed that the results following the expenditure of these amounts have been perfectly satisfactory, yet it can be claimed that a great deal more activity has been shown generally with regard to mining on the West Coast of Vancouver Island during 1899, than had been the case during any previous years, and the money that has been spent, has been well spent as a rule. Usually small forces of men have been employed in opening up prospects, on which outcrops alone had been previously discovered. In nearly every case the work was concentrated on the best showing, and prosecuted along lines which should result in determining absolutely in the near future, the permanence of some of the ore bodies, the outcrops of which indicated a possibility that paying mines could be developed.

So far as ore shipments are concerned they have been restricted to about 30 tons from the W. W. W., and a few trial shipments from other prospects. If the West Coast were judged from a standpoint of shipments during the past year, of course the outlook could not be considered promising. But it would not be at all fair to base an opinion of the possibilities of this portion of British Columbia from any such standpoint, because in some instances which have come under the writer's knowledge, ore has been accumulated on the dumps, and the work is being prosecuted to determine whether at deep levels the ore bodies maintain continuity. Owing to the extreme density of the underbrush and heavy growth of timber, it is expensive to install haulage machinery whether gravity tramways or aerial are employed; consequently the companies which are to-day attempting to develop the mineral resources of the West Coast, are as a rule contented to wait before they install any haulage plant, in order to ascertain the capacity of their mineral claims for furnishing shipments.

There have been but few bona fide deals negotiated during the past year: In the vicinity of Alberni the W. W. W., the Lake Shore Group, and the Hanson Group, near Hayes' Camp, have all passed into the hands of syndicates which are prosecuting development work; in the vicinity of Clayoquot Sound, the Jumbo on Deer Creek, the New York group near the head of Bedwell Sound, the Castle and Satanita groups, have all exchanged ownerships, and especially at the three first named there has been expended on each a considerable amound to determine their values; on Sydney Inlet the Jones & Kincaid group has recently been bonded to an English syndicate, and the Anaconda group to a Scotch syndicate. There have been rumors during the year of various other deals, such as the Copper Island iron ore deposits, the Seechart iron ore deposits, the Cerita Mineral Claims and others, but up to the present time no definite information regarding such deals has been made public.

If development work is continued on the right lines during the coming year, and pushed vigorously, the results attained should determine conclusively such facts relative to the value of the mineral resources on the West Coast, as will enable mining capitalists to judge of the future possibilities. There have been during the past summer, several representatives of syndicates and corporations making investigations and sampling several of the best prospects. Most of these gentlemen though, were desirous of acquiring developed properties, and consequently, while they generally expressed satisfaction regarding the surface indications, no deals were consummated except those already referred to.

One district at least on the West Coast of the Island—that of Bear River which empties into Bedwell Sound—has, through the action of the Provincial Government in appropriating a fund for bridge and road building, been placed in a position that will certainly encourage more extensive explorations during the coming year. While up to last July no pack horses could be used in this district, to-day they can be taken a distance of 8 miles above the mouth of the river. This will enable prospectors to extend their explorations much further into the interior, than has been done in the past. Owing to the fact that Alberni is the oldest mining camp on the West Coast, wagon roads and pack trails have been constructed for considerable distances, especially up some of the creeks which empty into the Alberni Canal. With the exception of these two camps, pack horses cannot be used on the West Coast at present; therefore all prospecting which has been done in the past, has been confined to such points as could be reached from the water, the prospectors using boats and canoes to convey their outfits.

It is not strange under these conditions, that so little is known of the interior of Vancouver Island; indeed it may be said to be entirely unexplored, except along the shores of the inlets and lakes. It will take years under present conditions, before a thorough knowledge of the mineral resources in the interior of the Island has been arrived at. Several suggestions have been made as to the best policy to be adopted, such as the appropriation of funds for a geological survey; encouragement to railroad building by subsidies; or more extensive appropriations for road building by the Provincial Government. The most practical of these suggestions in the opinion of the writer, is the first, because if a thorough geological survey be made, and the reports are favorable, it would undoubtedly be followed by extensive explorations by prospectors, and eventually by the building of wagon roads and railroads.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

CANNOT SUE FOR RENT AND DECLARE FORFEITURE.—A provision in a mining lease, that failure by lessee to keep and perform any of the covenants will render the lease null and void, "not binding on either party," is for the benefit of the lessor, who may either demand payment for rent due or declare a forfeiture; but he cannot sue for rent in arrear and declare a forfeiture.—Wheeling vs. Phillips (10 Pennsylvania Superior Court Reports, 634); Superior Court of Pennsylvania.

LIBERAL CONSTRUCTION GIVEN BY THE COURTS.—Where a mining location is made in good faith, the locator should not be held to a strict technical compliance with the law in respect to his location notice, and, if, by any reasonable construction in view of the surrounding circumstances, the language employed in the description will impart notice to subsequent locators, it is sufficient. For such statute should be construed with liberality, and the sufficiency of the location, with reference to natural objects or permanent monuments, is simply a question of fact. Whether a mining claim is "distinctly" marked on the ground, so that its boundaries can be readily traced within the meaning of the law, is a question of fact, to be determined from proof, and the manner of marking is not required to be stated in the notice.—Farmington Gold-Mining Company vs. Rhymney Gold & Copper Company (58 Pacific Reporter, 832); Supreme Court of Utah.

RIGHTS OF POSSESSION OF LICENSEE IN MISSOURI.—A miner who has been granted a license to work and produce ore in a certain mining lot, cannot, without cause, be arbitrarily dispossessed of his lot. He must have done something in violation of the rules of the licensor, which have become a part of the contract between the parties, before his rights can be forfeited. The license is contractual, and can be ended only by consent of condition broken. A rule of a mining company making the money paid registered miners from the proceeds of the ore full compensation for their work, and retaining the title of the ore in the licensor, does not affect the question of the possession of the miners in the lots assigned them, in the absence of any action taken by the licensor under the rules for a violation of same; and unlawful detainer, therefore, will not lie in favor of the purchaser of the licensor, on the theory that the miners were the mere servants of such licensor, and had no possession.—Bingo Mining Company vs. Felton (78 Missouri Appellate Court Reporter, 210); Appellate Court of Missouri.

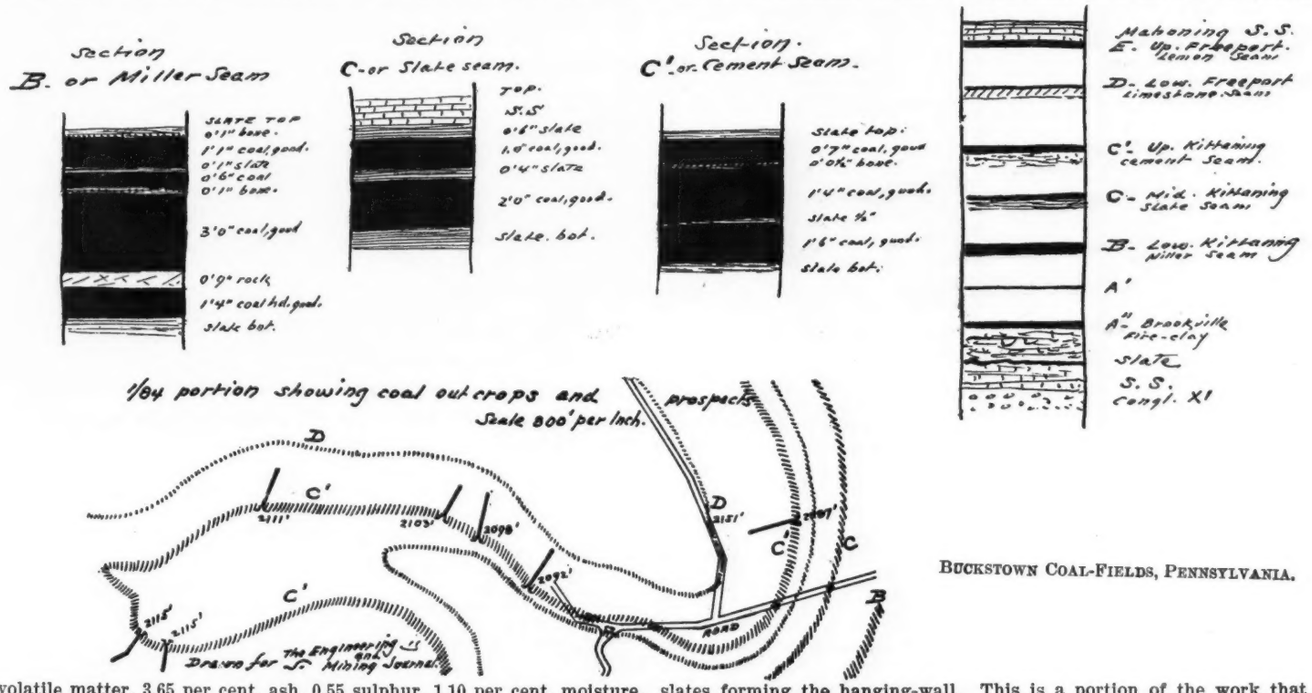
THE BUCKSTOWN COAL FIELDS, BERLIN BASIN, SOMERSET COUNTY, PENNSYLVANIA.

Written for the Engineering and Mining Journal by H. W. Althouse.

Southwest of the center of the State of Pennsylvania, 15 miles from Johnstown, in the northeastern portion of Somerset County, there lies at the base of the higher ranges of the Allegheny Mountains, a large and valuable coal field, that to-day is lying dormant and waiting the advent of capital. More particularly located this coal territory is to the southward of Windber of the Berwind-White Coal Mining Company's purchase, and, in Shade and Stoney Creek townships. The waters of Shade Creek, Miller's Run and Stoney Creek drain the field. A portion of the country roundabout is devoted to farming, the making of maple sugar, and to lumbering. Its mineral wealth remains virgin.

From Scalp Level southward the country ascends, until at Shade Furnace an elevation of about 1,900 ft. above sea level is reached. Here, we find the outcroping of the Pottsville Conglomerate, No. XI., the foundation of the carboniferous measures underlying, continuously, the entire coal-fields, in which is found the celebrated B bed of Miller Seam of the Lower Kittaning series, stretching forth southward under one of the dividing crests of the Allegheny Mountains.

The Miller Seam or B bed of coal, where mined in the region northwestward, furnishes a very high grade of fuel for marine uses, it being known as one of the best steaming coals, the analyses from the numerous prospects sampled, showing on an average about 18.20 per cent. volatile matter, 3.65 per cent. ash, 0.55 sulphur, 1.10 per cent. moisture, and 76.50 per cent. fixed carbon.


Section B. or Miller Seam
Section C- or Slate seam.
Section C'. or Cement Seam.
Mahoning S.S.
E. Up. Freeport Lemon Seam
D. Low. Freeport Limestone Seam
C'. Up. Kittaning Cement Seam.
C- Mid. Kittaning Slate Seam
B- Low. Kittaning Miller Seam
A'
A'' Brookville Fire-clay
Slate
S.S. Congl. XI
1/64 portion showing coal outcrops and prospects
Scale 800' per Inch.
ROAD
Drawn for The Engineering and Mining Journal

BUCKSTOWN COAL-FIELDS, PENNSYLVANIA.

Bed B lies in what is known as the Buckstown Coal-fields of the Berlin Basin, the territory in reference extending southward across the Buckstown pike toward the town of Berlin. In going over this expanse of country, from a tidal elevation of about 1,900 ft. at Shade, an altitude of over 2,550 ft. is reached, under which the coal measures are found continuously, with heavy cover in the lower series, excepting along the watercourses, which expose their full thickness, thus enabling their development above water level at sufficient tipple height above a railroad.

Beginning with the Pottsville Conglomerate, No. XI., a scheme of the measures on Shade Creek and the higher elevations, clearly shows sandstone, coal bed A''', slate, fire-clay, coal bed A'' or Brookville seam, coal bed A', then bed B or Miller seam of the Lower Kittaning series, bed C or Slate vein of the Middle Kittaning series, bed C' or Cement seam of the Upper Kittaning series, bed D or Limestone seam of the Lower Freeport series, bed E or Lemon seam of the Upper Freeport series, to the Mahoning sandstones. Among these coal beds, that of B, the Miller seam, and C' or Cement seam of the Lower and Upper Kittaning series, respectively, are the most important coals. Bed B will average 5 ft. 6 in., bed C 2 ft. 9 in., and bed C' 3 ft. 6 in. in thickness.

The writer, late last summer, had the pleasure of examining and surveying this particular coal locality, but could spare only 11 days in doing so. During that time 56 prospects and openings were located and examined, showing the vein structure, floor and roof. The topography of the region roundabout was carefully noted, and from Shade Furnace to the Buckstown pike, across same, toward Berlin, continuous instrumental surveys were made, from which lateral surveys were also carried across the basin at many points, locating all roads, watercourses, croppings of coal, prospects, topography, etc., over all of which tidal elevations were taken with the vertical circle. The instrumental surveys required over 1,100 stations, 63 bench marks, and measured 40 miles, from which above 69 miles of coal crop of the various coal beds were determined. Besides a preliminary line of railroad, 9 miles in length, was approximately located to suit the mining development of the field. The territory embraced covers 36 square miles, about 23,000 acres.

METHODS OF MINING AT THE BADGER IRON MINES, COMMONWEALTH, WIS.*

By O. C. Davidson.

The ore deposit afterward known as the Badger Mine of the Commonwealth Iron Company, was first found in April, 1891. The ore was discovered by test-pitting, which also showed that the drift above the ore was from 8 to 20 ft. deep, and averaged about 12 ft. We were anxious to secure as large a product that season as possible, as ore was in good demand, and it was decided to strip the ore-body, and at the same time start sinking shafts.

The ore-body, as far as we had traced at that time, was a little over 500 ft. long and 90 ft. wide at its widest point. Three single-skip shafts were started in the foot-wall, the distance between them being 250 ft. The east shaft, owing to the position we were compelled to locate our railroad tracks, would have proved inconvenient if sunk on an incline, and this shaft was, therefore, made vertical. The other shafts were sunk at an angle of 68° from the horizontal, and this we afterward found to be very near the actual dip of the foot-wall.

The 72,435 tons of ore shipped the first season came from the 80-ft. level, and during the next winter the shafts were sunk 100 ft. deeper, and the mine was worked as an open pit to a depth of 180 ft., the ore being obtained by the milling method and by under-hand stoping. In order to work the mine in this way and to secure all the ore on the hanging side, it was necessary to hoist a great many thousand tons of the red slates forming the hanging-wall. This is a portion of the work that we do not refer to with any pride, as we now realize that it would have been more economical to have stopped open-pit work at a depth of 100 ft., and work from that depth as we did below the 180-ft. level.

The next level was opened up 90 ft. below the bottom of the open pit. A drift was driven in the foot-wall connecting the shafts, and from this drift were driven cross-cuts every 65 ft. Directly above these main cross-cuts, sub-cross-cuts were driven at a depth which, when worked out, would give us a stope 70 ft. high and have a back or floor of ore above 20 ft. thick. These main cross-cuts and sub-cross-cuts were then connected with raises, which were placed at such points as would best enable us to separate the three grades of ore that were mined. Chutes were built in the bottom of these raises and the ore was mined by the milling method precisely as it is in open pits, except that we left pillars across the ore-body 25 ft. thick, and worked the ore out in stopes 40 ft. wide and 70 ft. high. The mine was opened up and worked in this manner, the levels all being 90 ft. apart, until a depth of 540 ft. was reached, but at this depth the merchantable ore was practically pinched out. There was also a decided pitch of the ore-body to the west, so that the East Shaft was only carried to a depth of 270 ft., and as the ore in the east end of the deposit pinched out, the rooms were filled with rock from the hanging-wall, mills being built up as filling progressed. When the bottom room was nearly filled the floor above it was mined out and sent down through the mills, and after the floors were all taken out the work of mining the pillars was begun. We first tried undercutting the pillars, but this was not at all successful, as the pillar would not settle as it should, and rock from the adjoining filled rooms would come in where it was not wanted. We, therefore, began top slicing, and have found this very satisfactory, both in the matter of cost of ore and because practically all of the ore is secured.

The product of the Badger Mine up to January 1st, 1900, is 1,368,703 tons of ore. We think the method of underground milling which we adopted enabled us to secure a larger product per man per day than could have been secured any other way. A great deal of drifting is required with this method, but though the ore is tough and does not

*Paper read before the Lake Superior Mining Institute, February, 1900.

require any timbering, it does not drill hard, and the cost of drifting is, therefore, very moderate. Very soft ore bodies or stratified or seamy ores could not probably be worked with safety in this manner, but as an evidence of the physical character of the Badger Mine ore I would say that we had several stopes 70 ft. high, 200 ft. long across the vein, and 40 ft. wide, and in one place we mined out two floors before filling, thus leaving a room 270 ft. high. It was our custom to confine our winter work as much as possible to opening, stock-piling as little ore as possible, and then when the ore could be loaded direct into cars, increase our force. In this way we were able to attain a large product during the summer, our maximum product being 38,000 tons for one month.

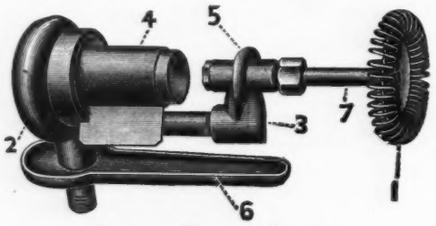
IRON ORE AND IRON PRODUCTION IN SPAIN.

The total production of iron ore in Spain during the year 1899 is reported by the "Revista Minera" at 9,234,302 metric tons, against 7,197,047 tons in 1898, showing an increase of 2,037,255 tons, or 28.3 per cent. About two-thirds of the production—6,146,542 tons—was from the mines of the province of Vizcaya, while 1,285,440 tons was mined in Santander. The greater part of the gain was from those two provinces, though the mines showed increased outputs nearly all over Spain.

The quantity of iron ore consumed in the country in 1899 was 621,165 tons, or only 6.7 per cent. of the total mined; the balance of 93.3 per cent. being exported. The products of the Spanish metallurgical works are given as below, in metric tons:

	1898.	1899.	Changes.
Pig iron made	262,497	295,840	I. 33,343
Wrought or puddled iron	.....	66,568	.....
Bessemer steel ingots	54,500	68,300	I. 13,800
Open-hearth steel ingots	58,105	54,654	D. 3,451
Finished iron and steel, all kinds	154,910	173,566	I. 18,656

Of the pig iron about 19,000 tons were made with charcoal as fuel. In



CRUCIBLE FURNACE BURNER.

1898 the production of puddled iron was reported only in a very incomplete way, so that comparisons cannot be made on that item. The finished products included bars, plates, beams, shapes of all kinds, forgings and merchant iron. The exports of pig iron last year were 40,919 tons, a decrease of 5,186 tons from 1898.

The exports of iron ore were as follows, in metric tons:

	1898.		1899.		Changes.
	Tons.	Per ct.	Tons.	Per ct.	Tons.
Great Britain	4,748,557	72.3	6,224,229	72.3	I. 1,475,672
Germany and Holland	1,193,924	18.3	1,544,449	17.9	I. 350,525
France	399,424	6.1	443,818	5.1	I. 44,394
Belgium	201,695	3.1	254,860	3.0	I. 53,165
United States	5,792	0.1	132,422	1.5	I. 126,630
Other countries	8,670	0.1	13,359	0.2	I. 4,689
Totals	6,558,062	100.0	8,613,137	100.0	I. 2,055,075

Great Britain remained by far the largest customer for Spanish ores. Germany and Holland are given together, because the ore reported by the custom houses as shipped from Spanish ports to Holland was all in transit to German furnaces. The total gain in exports last year was 31.3 per cent., or somewhat more than that in production.

NEW IRON MINES IN RUSSIA.—The Novo-Povlovka Iron Company is building blast furnaces, steel works and a rolling mill at Novo-Povlovka in the government of Ekaterinoslav. The company has bought the Siginovski iron mines in the Southern Oural, and proposes to ship ore from those mines to its new works.

ELECTRIC POWER IN PRUSSIA.—An official return estimates the total capacity of the engines—steam and gas—at work in Prussia during 1899 in generating electricity for lighting and power purposes, at 333,000 horse-power. In 1891 the total was 50,000 horse-power, or less than one-sixth of last year's total.

COAL PRODUCTION IN PRUSSIA.—The production of coal in Prussia for the full year ending December 31st is reported as follows, in metric tons:

	1898.	1899.	Changes.	Per ct.
Coal	89,542,128	94,778,252	I. 5,236,124	5.8
Brown coal (lignite)	26,064,543	28,466,212	I. 2,401,669	9.2
Totals	115,606,671	123,244,464	I. 7,637,793	6.6

The increase would have been greater had not the production been strictly limited by the different syndicate agreements.

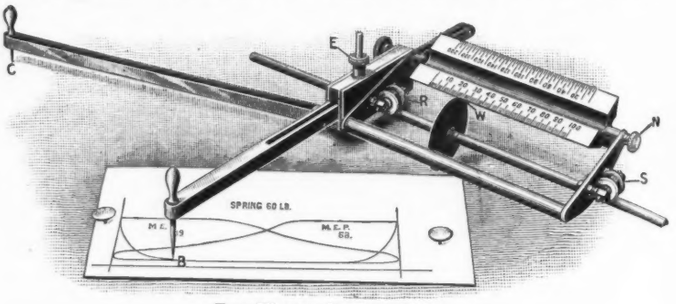
IRON DEVELOPMENTS IN THE OURALS.—The new railroad now under construction by the Russian Government from Chelabinsk, on the western end of the Siberian line, to Zarizyner will furnish transportation for a number of iron mines in the Southern Ourals, including those of the Magnitnaja Mountain, which have been little worked on account of the cost of transporting the ore. These deposits are large and the ore is said to average 60 per cent. metallic iron. A new company, which has begun to build iron works at Iusovska, in the government of Ekaterinoslav, has secured a concession for prospecting and opening iron mines on Crown lands on the line of the new road.

AN ASSAYER'S BURNER.

The White Manufacturing Company of Chicago has recently placed on the market a crucible furnace burner that has features entirely its own and is capable of doing good work. The burner is used in connection with crucible and muffle furnaces and is operated under a pressure of 30 to 60 lbs. The generator is set to the front so that the flame may be burned entirely within the furnace and still maintain heat sufficient to generate the gas to the burner. It is provided with a drip cup for lighting and an air regulator that changes the condition of the flame. It is provided with a cold handle and renewable needle seat or orifice. The burner is made of red metal. The generator has a circulation of gasoline around the projected flame. We illustrate the burner herewith.

THE WILLIS PLANIMETER.

The accompanying illustration shows the improved Willis planimeter, which is especially designed for the calculation of indicator cards. Users of the former instrument, with the glass rod, will be pleased to note that in the new form the glass rod is replaced by a polished steel spindle which glides beneath the two rollers, R and S; this gives the instrument great smoothness and accuracy of wheel movement, as well as rendering it thoroughly substantial and durable. The depressible pin, E, avoids the trouble of turning the instrument over when setting to card length. The removal of the milled head screws permits the instrument to be taken to pieces and packed readily in a small leather-covered case ½ by 3½ by 9½ in., which can be carried in the pocket or in an indicator box. The white enameled triangular scale has six graduated edges, and by turning the proper one next the wheel



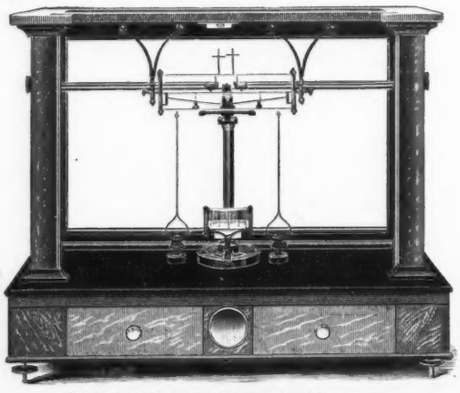
THE WILLIS PLANIMETER.

the mean effective pressure can be read directly from the card without calculation. The same scale can be used for setting for boiler pressure, vacuum lines, etc. The instrument is not only serviceable for measuring indicator cards, but by reason of its various scales and adjustable arm length will read areas directly in square inches or directly in units particularly suited to draughtsmen and engineers, such as square feet, square yards on different scale drawings, acres on survey maps, etc. There can also be purchased with the instrument a horse-power attachment which permits horse power to be read directly from indicator cards without calculation of any kind. This latter will be especially appreciated by engineers who have many cards to calculate or to report the horse power regularly.

The instrument is made of polished brass and steel, fully nickeled, and presents a pleasing and attractive appearance. It is manufactured and sold by Jas. L. Robertson & Sons of New York.

A NEW PRECISION BALANCE.

The accompanying illustration shows a new precision balance, with 5-in. beam, recently placed on the market by William Ainsworth & Sons of Denver, Colorado. In the cut the counterpoised sliding door has been removed, to show the balance better.



THE AINSWORTH PRECISION BALANCE.

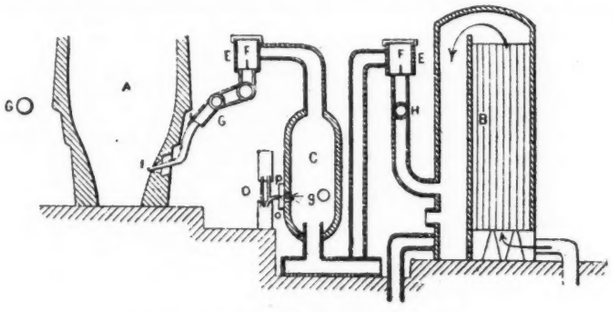
This balance is one of the latest approved construction, with "fall-away" pan, rests and yokes, having agate contacts throughout, there being no metal contact points with the beam or hangers. A plate-glass sub-base covers the entire base, and all metal work is gold plated. The case is of mahogany, French polished, with two drawers in the base, and counterpoised sliding door.

The beam, which is made of a new palladium alloy having a tensile strength of from 80,000 to 90,000 lbs., is divided into 50 parts each side of the center for the use of a half milligramme or one-milligramme rider; and as there is no obstruction on the top, the rider may be placed at any point from the center to the last division on either end. Cylindrical reading glasses are provided for reading the beam and index, and the latest improved rider apparatus, with rod locks, is furnished.

This balance has been designed for especially accurate weighings, such as control and umpire assays, and for the most accurate work in scientific and chemical laboratories, balances of this general construction having been furnished sensitive to 0.001 milligramme.

THE CARBURATION OF AIR IN THE BLAST FURNACE.

The quantity of fuel consumed in the production of pig iron in the blast furnace is the factor which plays the greatest part in determining the cost of the crude iron, and the influence of this factor makes itself particularly felt in periods of a scarcity of coke such as is now being passed through. Consequently it is not surprising to find inventors devoting their attention to devices and methods for reducing the consumption of fuel by every possible means. M. Pugh, manager of the Gouraincourt blast furnace near Longwy, has, states the "Revue des Sciences," made an application of a device of his invention, the object of which is the furnishing of combustible elements to the hot air before it is introduced into the furnace. Interposed in the air conduit between the Cowper stove and the tuyeres is a cylindrical chamber, of steel plate, the inner walls of which are lined with refractory bricks. At the lower part of the chamber are four openings, g. Each of these holes is covered by a plate, p, with a small central hole, o, through which the hydrocarbons are forced by an injector, D, at the exterior. The hot air is led into the chamber, C, through the opening at the bottom, and, coming in contact with the jets of hydrocarbons, becomes strongly carburetted. The carburetted air then passes out at the top and continues on its way in this state to the furnace. Valve boxes, E E, are arranged in the air conduit at each side of the new apparatus, which permits the latter to be cut out for cleaning purposes, etc., without interfering with the operation of the furnace. It is possible to employ burners in place of the injectors by forming in the plate, p, a certain number of air admission holes, of variable section; in this way the combustion would be regulated, and at the outlet of the tuyeres, even oxide of carbon and hydrogen—that is to say, reducing elements at



APPARATUS FOR CARBURIZING BLAST.

very high temperatures—would be obtained. The latter method is recommended for the production of pig iron rich in manganese and silicon.

In the illustration, A is the blast furnace, B the Cowper stove, C the carburetting apparatus, D the injector; E E, valve boxes; F, valves; G, the conduit for hot air; H, pipe putting the stove in direct contact with the conduit, G. At o is shown the hole for the injection of the hydrocarbons.

WEIGHT OF RAILS ON INDIAN RAILROADS.—There has been, during many years, a gradual increase in the section and in the length of rails in India. The weight per yard of the Indian Southern Railway has gradually increased to 75 lbs., that of the East Indian rail to 85 lbs. The length of Indian rails has increased from 24 ft. to 30 ft., and on the Bengal and North-Western and East Indian Railways to 40 ft. It is probable, says "Indian Engineering," that 40 ft. is the convenient limit for Indian railways.

A MAGNETIC ANOMALY.—The London "Electrician" says that one of the most extraordinary magnetic anomalies is presented by the province of Kursk in Russia. At the invitation of the Imperial Russian Geographical Society, the French Minister of Public Instruction sent Prof. Moureaux to make a magnetic survey of that region. Taking the town of Kursk as a base, Prof. Moureaux made excursions to 109 different stations in the province. The plateau between the Plota and Solotinka rivers extends over an area of about 2 square miles. In this restricted area the declination was found to vary from 34° E. to 96° W., and the inclination from 48° to 79°, values which correspond respectively to the normal inclinations in Morocco and Spitzbergen. But the most remarkable abnormality is to be found in the intensity, which yielded horizontal components varying from 0.50 to 0.59, and vertical components exceeding 0.97. The observations have since been continued by Prof. Leyst of Moscow, who found a point near Kotchetowka where the dipping needle points vertically. There is nothing observable in the surface conditions of this region to explain its magnetic characteristics. It is a rolling country, covered with a very fertile black soil reposing upon cretaceous rock. No iron has been found down to depths of 600 ft. below the surface.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like will be reproduced whenever possible. Specimens should be of moderate size and should be sent prepaid: We cannot undertake to return them. If analyses are wanted we will turn specimens over to a competent assayer, should our correspondent instruct us to do so and send the necessary money.—Editor E. & M. J.)

62. Sphalerite.—A. F. Rogers, in the "American Journal of Science" describes some sphalerite crystals of peculiar habit, from the Joplin zinc district. The specimens described are reddish brown in color, and were found as isolated crystals, showing no attachment, in a dark clayey, silicious matrix. The associated minerals include dolomite, pyrite and chalcopyrite. The crystals measure from 0.5 to 3 centimeters in longest diameter, and are peculiar in that they are abnormally shortened, in the direction of one of the octahedral interaxes. The predominent faces are the rhombric dodecahedron. In consequence of this abnormal development, the crystals appear as combinations of a rhombohedron, with the prism of the second order, and the crystals have a decided hemimorphic aspect in the direction of the above mentioned axis, so that we have isometric crystals, possessing apparent lower symmetry, namely that of the rhombohedral-hemimorphic group. Occasionally the negative tetrahedron is present. Twins are more common than the simple crystals as the twinning plane is the ordinary one for sphalerite, and these twins, as they show no re-entrant angles, may easily be mistaken for simple crystals. The sphalerite crystals, generally found in the Joplin District, are those of the ordinary types, which are tetrahedral in aspect.

66.—Cinnabar.—Beautiful specimens of cinnabar, some of them covered with globules of mercury, are obtained from the deposits now being opened in Presidio County, Texas. The veins are in sandstone and limestone and vugs in the veins often contain large calcite crystals colored bright red with the cinnabar.

67.—Leucite.—At a recent meeting of the New York Mineralogical Club, Dr. H. S. Washington described the famous area of intrusive rock, probably a laccolith, at Magnet Cove, Ark. The laccolith is remarkable for its variety of rock types, the constituent minerals, on cooling, separating out in rock zones, the most basic rock being at the center of the laccolith and the most acid at the edges. Chemical analysis shows a regular gradation of types between the two extremes. The rocks as a whole are remarkable for the abundance of nepheline and of brown garnets, while augite is common. One of the rock types is of especial interest from its richness in leucite. Crystals of this mineral over 2 in. in diameter have been found, and it is perhaps the best locality for large crystals in this country. Leucite, as is well known, is a constituent of volcanic rocks, particularly the comparatively recent lavas of Vesuvius, and the Magnet Cove locality is of interest as a case where the mineral occurs in an old intrusive rock that probably cooled very slowly—that is at a considerable depth.

68.—Platinum.—The great demand for this metal at present has increased the price decidedly and prospectors will do well to be on the lookout for it. Platinum is infusible before the blow pipe, is of a silvery-white color, and is malleable. It occurs native as irregular nodules, generally of small size, in certain basic igneous rocks, which were probably originally of the type known as peridotite. The rock as found in the Oural Mountains, however, is a serpentine, and prospectors in California, Oregon, Washington and British Columbia should look for the metal in any serpentine ledges they may run across in a region where platinum nuggets have been found. The metal is often alloyed with iron, and the nuggets found in stream gravels may have a rusty exterior, but they are easily recognized by their high specific gravity, color and malleability.

69.—Vivianite.—Some very pretty specimens of vivianite were recently found in Yuba County, California. The specimens, but a few of which were found, were aggregates of crystals, some in stellate groups and blue to green in color with a tendency to deepen on exposure. The crystallized form of this mineral is quite rare to the United States, crystallized specimens having been found in but a few localities, New Jersey and Maryland having been the chief producers. It occurs chiefly associated with the minerals pyrrhotite and pyrite, in copper and occasionally in tin veins. It is sometimes found in clay beds, in both friable and crystallized shapes, and associated with bog iron ores, likewise in fossil beds and volcanic matter.

70.—Pyrite.—The bituminous coal mines in the vicinity of Carbondale, Illinois, have recently been taking out in the shale large numbers of irregular spheroidal nodules of iron pyrites. Some of them have been

shipped to Eastern mineral specimen dealers. The pyrite "suns," so-called, disc-like concretions of pyrite 3 inches or so in diameter, make very attractive cabinet specimens.

71.—Preserving Sphalerite Specimens.—Various attempts have been made to preserve the beautiful iridescent colors, due to tarnish, of the sphalerite specimens from the Joplin, Missouri, lead and zinc region. Coats of varnish, oils, etc., have proved worthless in preserving the iridescence. The only successful method of preservation found so far is to keep such specimens in places where light cannot penetrate.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Assaying and Mineralogy.—What works on assaying would you recommend for one who knows little or nothing about the subject? Also what work would be of service to a prospector in the field; and an elementary work on mineralogy.—J. H.

Answer.—For an assayer just beginning, Hiorn's "Practical Metallurgy and Assaying" ($1.50), is a good book; later Aaron's or Furman's more elaborate works might be taken up. For prospectors we can recommend Stretch's "Prospecting, Locating and Valuing Mines" ($2), and also Dana's "Manual of Minerals" ($1.50). The three books mentioned will do very well for a beginning. You must not rely on books altogether; practical experience is also necessary.

Copper Ore Deposits.—The writer is interested in a prospect in Arizona, with information as follows: 30-ft. quartz dike over one mile in length, with a north-and-south course; intersected by a limestone dike 100 ft. wide, which runs northeast and southwest about 1½ miles. At the point where the limestone dike intersects the quartz we find ore carrying about 14 per cent. copper, and $8 gold to the ton. Can you give me any information as to the future of this prospect, basing your estimates on geological conditions governing this particular territory?—H. G. H.

Answer.—It would be impossible to give an opinion on the point on which you ask information without a more definite knowledge of the surroundings and of the work which has been done on the prospect. Even then it would not be safe to give any opinion on the claim without a personal examination. You do not state how much ore has been found nor to what depth your explorations have extended. A "limestone dike" is somewhat of a novelty, is it not?

Pumping Water from Shafts.—What kind of pump would be efficient to keep a shaft 4 by 6 in. clear of water, while sinking to a depth of 100 ft.? Pumping is to be done by hand, single or double. The intention is to sink the shaft with the least possible expense. At 20 ft., water comes in slowly, and can be handled by bailing; but during the night 3 or 4 ft. of water will collect in the bottom of the shaft.—J. H.

Answer.—There are many patterns of small pumps on the market, most of which are good. When the quantity of water is as small as you mention, a pump of moderate size would be sufficient; but it would be well to make provision for a larger flow of water, as you are quite likely to have it when you go deeper. An application to some of the pump makers who advertise in our columns will procure catalogues which will give you the information you want.

Consult the "Engineering and Mining Journal," July 8th, 1899, on "Pumps for Prospectors and Small Mines;" and November 18th, 1899, on "Prospecting by shafts."

The Nome District, Alaska.—Are there any good books to be had on the new Nome gold-fields, in Alaska? What is the best way to get there?—J. H. P.

Answer.—The literature on the Nome gold fields is rather scattered and fragmentary as yet. You will find articles on the region in the "Engineering and Mining Journal," January 27th and February 17th, 1900. The geology of the district has been but little studied as yet, and a good scientific account of the region has still to be written. The best book we have seen, written from a prospector's and miner's standpoint, is by Ivan Brostrom, one of the earliest visitors to the region. The cost is 50 cents, and it is entirely practical.

Nome is on the sea coast and can be reached only by water. At present there is no certain way of reaching the place, as no regular lines of steamers are running. In the spring, however, there will be plenty of vessels making the voyage from San Francisco and from the Puget Sound ports. The chances are that there will be many people making the voyage in May and June.

Gold Dredging in New Zealand.—Can you give me any reason why dredging for gold has been so much more successful in New Zealand, apparently, than anywhere else?—W. H. B.

Answer.—Dredging for gold has been successful in New Zealand chiefly because it has been applied there in a region especially adapted for that kind of work. A further reason is that it has been carried on there in a practical, common-sense way, and in most cases with only a reasonable capital investment. The great advantage of the dredge is that it can handle large quantities of material at a very low cost. It is therefore specially adapted for use where there are large quantities of low-grade gold-bearing sands, in connection with abundant water supply. These conditions are found in the New Zealand rivers. Dredging has been successful in this country where the same conditions exist, as in some parts of Montana and Idaho, to a limited extent in California, and also in Georgia. It is quite probable that the use of dredges will be considerably extended within a few years; and there is no reason why they should not prove a success with a proper choice of localities.

Magnetic Explorations for Ore.—Will you please inform me whether diamagnetic metals or ores in the earth cast any magnetic influence on the surrounding materials or the atmosphere? Also whether there is an apparatus for detecting this influence, if it exists?—J. H. W.

Answer.—Certain forms of iron ore, such as magnetite and pyrrhotite, exercise a magnetic influence, and their presence has been frequently detected or indicated by the magnetic needle. This kind of exploration has been carried on to some extent in New Jersey and in the Lake Superior Region. It has been most extensively practised in Sweden, where magnetic explorations for iron ore have been successful, and where the art of using the needle for this purpose has been brought more nearly to perfection than anywhere else. No other ores or minerals, however, exercise this influence, and their detection by magnetic or electric instruments of any kind is impossible. We are aware that instruments are now being offered in various parts of the country for which the power of detecting mineral deposits of different kinds is claimed; but these devices are simply intended to impose upon credulous people.

Onyx.—Is there any onyx obtained in America, and if so, where? Is there a demand for the material? I am told that a deposit has been found in the suburbs of Chicago.—O. T.

Answer.—Onyx is produced in the United States in Virginia, Colorado, Arizona and Kentucky. It is known to exist also in South Dakota, Utah and New Mexico. We have never heard of any found near Chicago or in any part of Illinois. It is possible that there is some stained or banded limestone which may have been mistaken for onyx; though any one at all familiar with the stone could hardly be deceived by such specimens. The most highly valued onyx comes from Mexico, though experts think some of the Arizona and Kentucky stone is quite as good.

Onyx is used entirely for ornamental work, the decoration of buildings and similar purposes. It is impossible to give any general value, as prices vary widely according to the quality of the stone, the fineness of texture, and especially the size of the slabs which can be cut. It is claimed that the Kentucky deposits will furnish larger stones than any which can be obtained from Mexico. These deposits were described by Mr. S. S. Gorby in the "Engineering and Mining Journal" for June 17th, 1899. The article also gives, incidentally, considerable information about onyx generally.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending February 20th, 1900.

643,633. APPARATUS FOR CHARGING INCLINED GAS RETORTS. Andre Coze, Rheims, France. The combination of a movable carrier, a bucket and a movable stop co-operating with the carrier to limit the travel and determine the limit of movement of the bucket with the carrier.

643,674. MINE ELEVATING APPARATUS. John Muirhead, Laurium, Mich. The combination with a mine shaft; a car, a draw-head carried by the car and arranged longitudinally of the shaft; a car-propelling cable operatively connected with the draw-head, and a beam arranged longitudinally of the shaft, out of the way of the path of the car; of a cam-shaped brake, supported from the car and arranged to render it capable of biting or clutching the beam upon oscillating it in one direction; two arms rigid with said cam-shaped brake, and projecting laterally from the axis of said brake and arranged at right angles, or at approximately right angles, to each other; a link operatively connecting one of the said arms with the draw-head; and a spring connected at one end to the other arm, and having its opposite end attached to the car.

643,726. ENAMELIZED STEEL OR HOMOGENEOUS IRON. William F. Niedringhaus and George W. Niedringhaus, St. Louis, Mo., assignors to the National Enameling and Stamping Company, New York, N. Y. Steel or homogeneous iron prepared for enameling by enamelizing the same by a pretreatment in a molten condition with

an enameling flux or fluxes whereby the metal is specially adapted for retaining an adherent coating of enamel.

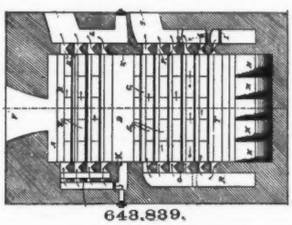
643,732. STEAM PUMPING ENGINE. Bert O. Rhodes, Harvey, Ill., assignor to Frederick C. Austin, Chicago, Ill. A steam pump comprising a suitable piston and piston cylinder, and a steam chest enclosing a steam-actuated valve, the casing being provided with suitable ports or passages, the admission and exhaust passages fitted with check valves.

643,762. METHOD OF PRESERVING TIMBER. William C. Cross, Brisbane, Queensland. The method consists in first impregnating timber with a solution of arsenious acid and an alkali, and afterward applying a solution of copper sulphate.

643,764. METHOD OF REHEATING COMPRESSED AIR FOR INDUSTRIAL PURPOSES. Thomas A. Edison, Llewellyn Park, N. J., assignor to the Edison-Saunders Compressed Air Company, West Orange, N. J. The method consists in directing a portion of the air into intimate proximity with a source of burning combustible; in effecting a reduction in pressure of the air between the source of heat and the point of use; in causing a portion of the air to flow, by reason of such reduction of pressure, through the burning combustible to absorb heat directly therefrom and to support combustion thereof, and in mixing the directly-heated portion of air with the indirectly-heated portion of air, prior to use.

643,831. HYDRAULIC MOTOR. John Stumpf, Chicago, Ill. The combination with the piston and packing chamber having inlet and outlet ports, of an outwardly-opening valve at the inlet port with means for closing it, a valve governing the outlet port and means operating to close the outlet valve during the movement of the piston toward the end of its discharge stroke, whereby the inlet valve is opened by the increase of pressure in the piston chamber resulting from the further movement of the piston after the outlet valve is closed.

643,839. QUICKSILVER FURNACE. Hugh C. Davey, Calistoga, Cal. Inner and outer walls, the former having passages or openings through them, superposed roasting and drying chambers between said inner



643,839.

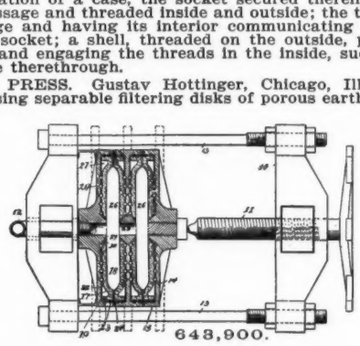
walls and connecting so that the material will flow from one chamber to the other by gravitation, a fireplace and a discharge flue for each chamber and located between the inner and outer walls, with the fireplace and discharge flue of one chamber separate and independent of the fireplace and flue of the other chamber, and means for supplying ore at the top of one chamber and discharging it at the bottom of the other chamber.

643,856. MANUFACTURE OF CEMENT. William A. O. Wuth, Pittsburg, Pa. The process consists in hydrating burnt lime with water containing a soluble salt which will evolve oxygen at a high temperature, mixing the hydrated lime with powdered blast-furnace slag and burning the mixture.

643,857. EXCAVATOR AND DITCHER. Edward M. Zahl, Portland, Ore. The combination with a stay-rope and traveler, of a car, an elevator therefor, and a scoop and elevating rope.

643,876. PRESSURE GAGE. Frederick Lane, Brookline, Mass., assignor to the Crosby Steam Gage and Valve Company, Boston, Mass. The combination of a case, the socket secured therein having an interior passage and threaded inside and outside; the tube spring within the gage and having its interior communicating with the interior of the socket; a shell, threaded on the outside, placed within the socket and engaging the threads in the inside, such shell having a passage therethrough.

643,900. FILTER PRESS. Gustav Hottinger, Chicago, Ill. A filter press comprising separable filtering disks of porous earthenware arranged

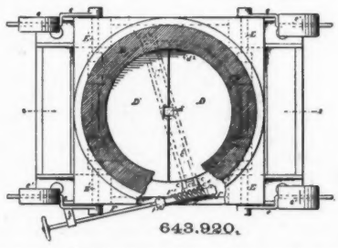


643,900.

in pairs, having recessed or hollowed-out opposed faces to form chambers for the material to be filtered.

643,918. AIR COMPRESSOR. Knut O. B. Textorius, Boston, Mass., assignor of nine-twentieths to John J. Howard, same place. Compressors, the movable members of which are connected in pairs to reciprocate alternately, a gyratory annular track supported by the movable members of the air compressors and disposed in an inclined plane, a weighted wheel located to travel upon said gyratory track, means for supporting and operating the wheel, a second weighted wheel mounted to travel upon said track, and means whereby said second weighted wheel is held in working position to prevent the gyratory track from tilting.

643,920. CUPOLA FURNACE. David Townsend, Philadelphia, Pa. The combination of a cupola body, doors hinged to the under side of the



643,920.

body, one door underlapping the other, fixed supports at each side of the doors, a bar pivoted to the underlapping door and adapted to engage the fixed supports, and means engaging the bar so as to turn it on its pivot and lock the doors in the closed position.

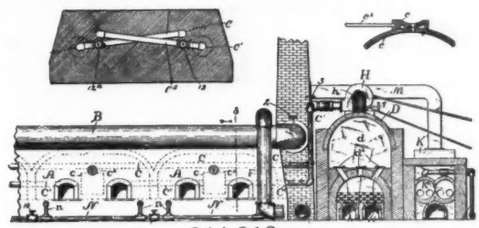
643,962. HYDRAULIC AIR COMPRESSOR. Jesse C. Howard, Columbus, Ohio. In a hydraulic air compressor, a casing, 2, having supply and exhaust ports with valve seats, 8 and 7, respectively, and piston chambers, 10 and 10a, a valve stem having valves for the seats, 8 and 7, pistons in the chambers, 10 and 10a, with means for automatically changing the pressure from one piston to the other.

643,989. MANUFACTURE OF CEMENT. Frank Sehr, Blankenhayn, Germany. A cement consisting of approximately 50 per cent. of powdered hard porcelain, 35 per cent. half-burnt porcelain, 15 per cent. of raw feldspar, and water glass to form a paste.

644,000. CONTINUOUS KILN FOR BURNING BRICKS OR THE LIKE. Arthur E. Brown, London, England. A firebox arranged to extend transversely across and below the floor of each burning chamber and comprising a solid hearth adapted to receive a charge of fuel and an upwardly-extending grating of refractory material adapted to admit of the passage of air to the fuel.

644,009. AMALGAMATOR. Charles G. Garrison and James A. Fitzsimmons, Vancouver, Canada, assignors of one-third to William Shrubsole Copland, same place. The combination with a chamber, of a shaft and a series of superimposed spiral segments mounted upon it, said segments having amalgamating surfaces and being each of a diameter to snugly turn within the casing, the several sections being adapted to rotate with the shaft, the outer edges of each segment being turned up vertically the depth of the pitch of the spiral formed thereby, whereby a spiral chute for the passage of the water and auriferous material without allowing the same to come into contact with the inner walls of the chamber, is provided.

644,012. PROCESS OF DISTILLING COAL. Joseph Hemingway, Sundance, Wyo., assignor, by direct and mesne assignments, of two-thirds to John W. Rogers, same place, and William E. Rothermel, Chi-

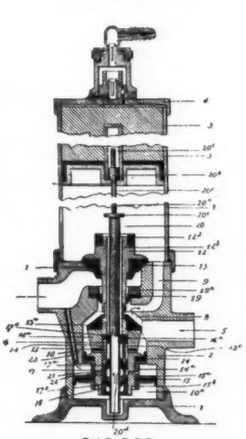


644,012.

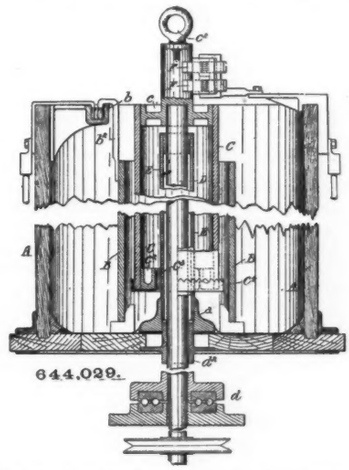
cago, Ill. The method of heating a part of a battery of coke ovens, which consists in utilizing the waste heat of one-half of said ovens, and also the heat obtained from the combustion of the volatile products of said half of said ovens, to heat and force air into the other half of said ovens.

644,018 and 644,019. APPARATUS FOR CASTING HOLLOW INGOTS. Nils H. O. Lilienberg, New York, N. Y. The combination of an ingot mold, a support upon which the same can be rotated, means for feeding molten metal into the mold, and a shaft engaging with the mold to rotate the same and movable longitudinally with reference to the mold so as to serve as an ingot ejector.

644,029. PROCESS OF ELECTRO-DEPOSITION OF METALS. Sherard O. Cowper-Coles, London, England. The process consists in passing an electric current from an anode to a cathode through an electro-



643,962



644,029.

lyte containing the metal to be deposited, at the same time moving the cathode through the electrolyte at such a rate of speed as will cause the hydrogen bubbles to be thrown off from the cathode and give such friction between the metal deposit on the cathode and the electrolyte as to yield tough and smooth deposits.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending February 3d, 1900.

2,330 of 1899. COAL CUTTER. H. Train, Glasgow. An improved guide for the cutting wheels of coal cutters.

2,747 of 1899. MAGNETIC SEPARATOR. W. A. Macfayden, Pretoria, S. A. R. In separating non-magnetic minerals and metals by means of electro-magnets, increasing the electric conductivity of the air by means of a radiation from uranium, thorium and similar metals.

5,760 of 1899. BLASTING POWDER. W. J. Orsman, Wigan. A black blasting powder formed by nitrate of ammonia, carbon and a nitrated hydrocarbon.

5,781 of 1899. NICKEL REFINING. U. le Verrier, Paris, France. Electrolytically refining pig nickel containing iron, by using a pig anode and pure nickel cathode, the iron being precipitated as hydroxide.

9,925 of 1899. MINE PROPS. W. H. Hepplewhite, Nottingham. Forming pit props with tapered ends; such props do not bend, break or buckle, but when overloaded show signs of wear at the ends only.

24,723 of 1899. SMELTING FURNACE. F. E. Hatch, Norway, Michigan, U. S. A. Improvements in smelting furnaces, with the object of distributing the heat better.

PERSONAL.

Mr. H. W. Hardinge has left Denver, Colo., for the Seven Devils Mining District in Idaho in the interests of New York copper investors.

Mr. Edgar Rickard has gone to Launceston, Tasmania, in the interests of the Venture Corporation, which recently bought the Briseis tin mine.

Mr. C. C. Worthington resigned his position as president of the International Pump Company at the recent annual meeting and will probably be succeeded by Mr. Daniel O'Day.

Mr. D. G. Jewett, late superintendent of the Big Bug Smelting Works at Mayer, Ariz., is now in the employ of the Venture Gold Mining and Milling Company, Guffey, Park County, Colo.

Mr. Charles H. Thompson, formerly mining engineer for the Empire Steel and Iron Company, resigned on March 1st to accept the position of assistant superintendent, with headquarters at Goshen, Virginia.

Mr. Charles B. Fischer, of Los Angeles, Cal., has gone to French Corral, near Grass Valley, Cal., to take charge of the cyanide plant of the Geneva Mining Company of Los Angeles, which owns mining properties at French Corral.

Mr. S. C. Higgins, of Sutter Creek, Cal., has returned from Punjom, State of Pahang, in the Malay Peninsula, where he went 18 months ago in the interests of the Punjom Mining Company, whose head office is in Hongkong. He considers the conditions for American mining men favorable in the Malay peninsula.

Mr. A. S. Dwight, of Denver, Colo., has resigned his position as secretary of the operating committee of the American Smelting and Refining Company to accept that of assistant to the president of the Compania Metalurgica Mexicana. Mr. Dwight has left Denver for a month's trip in Mexico, after which he will establish his permanent headquarters in New York.

Messrs. Pope Yeatman, manager of the Randfontein Mine; Louis Webb, manager of the Robinson Deep Gold Mining Company; H. H. Webb, consulting engineer of the Consolidated Gold Fields, Limited, of South Africa, and J. P. Gazzam, manager of the Simmer & Jack Proprietory Mines, Limited, all of Johannesburg, S. A. R., have been in the Lake Superior copper country recently.

OBITUARY.

We have just heard, with much regret, of the death of Emil Andrioli, the well-known chemist and electro-metallurgist, in London on February 23d. We hope to publish a fuller notice in our next issue.

SOCIETIES AND TECHNICAL SCHOOLS.

Massachusetts Institute of Technology.—In the course of electrical engineering, a Japanese student has chosen for his thesis a study of the size of wire necessary, when aluminum is used for a conductor of electricity, studying the relative capacity of aluminum as compared with copper. If the results of this thesis are satisfactory, they may form the foundation of a table showing the safe limits of current. The method chosen is entirely original; the temperature of the wire will be measured directly, while it is carrying different amounts of electricity.

Montana Society of Engineers.—At the regular meeting on February 10th, 15 members were present. The following men were duly elected to membership: Messsrs. Geo. W. Tower, Jr., W. E. Sanders, Geo. W. Wilson, A. E. Hobart, D. W. Hardenbrook, B. R. Putnam, Jerry Rourke, J. Benton Leggat, W. W. Wishon and E. C. Sickles.

The secretary was instructed to make no charge for dues for 1900 against Theron M. Ripley, one of the society's members, now doing service for his country in the Philippines. After a general discussion on the procuring and furnishing of suitable rooms for the new headquarters of the society, the society adjourned.

INDUSTRIAL NOTES.

The Berlin Iron Bridge Company, of East Berlin, Conn., has received through a large Philadelphia exporting house the contract for 11 plate girder bridges, to be sent to foreign countries.

The Lehigh Zinc Company's plant at South Bethlehem, which was established in 1853, is now removed to Hazzard, near Mauch Chunk. The plant was taken over by the New Jersey Zinc Company in 1894.

The Birmingham Foundry and Machine Company's plant at East Birmingham, Ala., is doing considerable work for the Virginia Coal, Iron and Railroad Company for furnaces in Tennessee and Virginia.

The Hood Machine and Foundry Company, Birmingham, Ala., has just competed four large ore washers for the Alabama & Georgia mining companies to wash ore at the latter's mines on the Alabama and Georgia line.

The Denver & Rio Grande Railway has ordered from the Baldwin Locomotive Works of Philadelphia, 15 new 8-wheel consolidation engines, to weigh without tenders 190,000 lbs. each, for hauling freight cars over the heavy grades and around the sharp curves of its line through Colorado.

The James Cooper Manufacturing Company has received an order through its Rossland branch for an Ingersoll-Sergeant compressor and receiver from the Gold Drop Mining Company of Phenix, B. C.; also an order for 3 drill compressor and drills from the Colington Mine at Erie, B. C.

The J. H. Montgomery Machinery Company, of Denver, Colo., reports among recent shipments 2 two-horse whims and equipment to the Montezuma Lead Company, Parral, Chihuahua, Mexico; an 8 by 10 double drum hoist, with boiler, to Buffalo, Colo.; machinery and supplies for a brick plant at Victor, Colo.; a 1-horse whim and equipment to Nogales, Ariz., and the same to Hiflin, Ala.

Mackintosh, Hemphill & Company, of Pittsburg, Pa., are installing 2 large reversing engines 55 by 66 in. geared for the Carnegie Steel Company, one at the Homestead Steel Works and the other at the Duquesne Steel Works. They are also erecting one 40-in. blooming mill for the Carnegie Steel Company at the Duquesne Steel Works., and have a contract from the Cambria Steel Company, Johnstown, Pa., for one direct reversing engine, 55 by 60 in.., and one 40-in. blooming mill.

The Clayton Air Compressor Company of New York City has booked an order for 4 air compressors, ordered by the Russian Government officials some 2 weeks ago, to be used in the Cronstadt Navy Yard. The Clayton Company recently shipped 3 compressors to the Stettin Navy Yard, for account of the German Government, making a total, it is said, of 18 Clayton compressors which will shortly be in use in the various government plants throughout Germany.

The American Fisheries Company, an English concern, has gone into a voluntary receivership, in order, it is stated, to reorganize and reduce the capital to a more suitable figure than the $2,000,000 preferred and the $8,000,000 common now outstanding. The preferred is paid up, while the common represents patents for extracting oil from menhaden. The reduction by the by-laws could not be made without the consent of all preferred shareholders; the by-laws were drawn in the interest of the original owners of the patents. Consequently the receivership was decided on. The receivers are Thomas Russell and Charles B. Hobbs.

The Means & Fulton Iron Company, at Birmingham, Ala., recently shipped a 100-H. P. marine boiler to Coombs & Company, at Apalachicola, Fla.; it is for a large tug. This was the first marine boiler manufactured in Birmingham and cost nigh $2,000. The steel was brought from Pittsburg. The same foundry has been doing considerable work about the stoves for the Woodward Iron Company's furnaces at Woodward, below here, and at the Gadsden Furnace, belonging to the Alabama Consolidated Coal and Iron Company. The same foundry also turned out the steel framework for a big shop for the Birmingham Cement Works at Ensley.

The Wefugo Company of Cincinnati, O., states that it has in the last six months furnished water softening plants to these concerns among others: Niles Tool Works, Hamilton, O., capacity, 96,000 gal.; Carnegie Steel Company, Lucy Furnace, Pittsburg, capacity, 576,000 gal.; Carnegie Steel Company, Upper Union Mills, Pittsburg, capacity, 480,000 gal.; Youngstown Steel Company, Youngstown, O., capacity, 240,000 gal.; St. Louis Smelting and Refining Company, Desloge, Mo., capacity, 86,400 gal.; Peru Steel Casting Company, Peru, Ind., capacity, 84,000 gals.; Chicago & Alton Railroad, Joliet, Ill., capacity, 100,000 gals., and at Chicago & Alton R. R., Bloomington, Ill., capacity, 400,000 gal.; Westinghouse, Church, Kerr & Company, Fremont, O., capacity, 120,000 gal.; also, 2 filters for Nassau, B. I.; 2 filters for Red Bluff ,Cal.

TRADE CATALOGUES.

Henry E. Wood, assayer, of Denver, Colo., sends out a little circular giving particulars of his ore testing laboratory, its equipment and the charges made for various kinds of assays.

The Carborundum Company of Niagara Falls, N. Y., issues a little illustrated pamphlet of 40 pages containing testimonials of the value of carborundum as an abrasive for a great variety of work.

The Industrial Water Company of New York City describes its water softening and purifying apparatus in a 16-page pamphlet. The apparatus is stated to require no skilled labor, to be continuous in operation, to require no external power, and to require but a slight expense for the reagents used.

Astronomical telescopes and many other engineers' surveying instruments are described in the 38 page pamphlet published by W. & D. Mogey of Bayonne, N. J. The transits and levels shown are furnished with a variety of attachments and the light mining transit has 5¼ in. horizontal circle with 2 double verniers reading to minutes, and weighs 9½ lbs.

"Commercial" iron-clad type R moderate and slow speed motors, which are stated to be so constructed as to offer the best possible protection against dust or the action of the weather, are described in a circular issued by the Commercial Electric Company of Indianapolis, Ind. The motors shown are certainly neat and compact in appearance and are stated to be of the highest efficiency.

Portable hoists in great variety are described in an attractive 24-page catalogue published by the M. C. Bullock Manufacturing Company of Chicago, Ill. The company states that the hoists have heavy box bed plates with guides and shaft bearings cast in one piece with the bed, and are built for compactness, durability and simplicity. Hoists for prospects and mines are shown, as well as those for tail and endless rope haulage plants.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

ALASKA.

(From Our Special Correspondent.)

North Pacific Mining and Transportation Company.—This company owns 3,000 acres of coal lands on which are several veins of fair lignite. Satisfactory tests have been made and the work of development is progressing rapidly. Tunnels have been driven in the principal veins for over 1,400 ft. Bunkers and wharves have been erected and the mines are ready for operation. The property is located on Katchekmak Bay, near the mouth of Cook's Inlet. Eastern experts are said to have made a favorable report on the mines.

ARIZONA.

Mohave County.

Juno.—This mine at Chloride, since the erection of the new steam plant, has pushed work very rapidly. The main shaft is down nearly 300 ft., and then there are drifts from each 100 ft. No ore is shipped.

Merrimac.—This mine at Chloride, since the installation of the new 10-stamp mill, has produced ore about as usual, but results are said to be unsatisfactory. Representatives of the management have been on from Philadelphia since the mill was erected and work begun.

(From Our Special Correspondent.)

Hassayampa.—The same parties interested in the Mulligan are developing this mine at Layne Springs, near Todd Basin.

Mulligan.—P. E. Lawrence is developing these mines in Todd Basin, near Mineral Park, for Messrs. Pennock Hart of Pittsburg, Pa., and J. B. Hamilton of Los Angeles. A two-compartment shaft is down 100 ft. and has struck a body of shipping ore carrying lead, gold and silver. There is water enough from the mine for a small concentrating plant.

Tub.—Dr. I. B. Hamilton of Los Angeles, Cal., has taken a bond on this mine in Union Basin, near Todd Basin. The mine belongs to Tubman Ayres, a California pioneer.

Yuma County.

Harqua Hala.—Work at the mines at Harqua Hala has stopped. It is stated that Mr. Hubbard, of Redlands, Cal., who bought the property at sheriff's sale some months ago, has found the venture unprofitable.

King of Arizona.—This company is now milling nearly 100 tons of free milling ore daily and continues prospecting the mine, which is down about 500 ft. The company contemplates increasing its water supply, which is pumped over 5 miles, and is used mainly in feeding a 100-ton cyanide plant.

Ray.—These mines, the property of a London, Eng., concern, which have been employing more

than 300 men, are reported closed. The company has not announced its reason for the shut-down. Poor management has been alleged and it is also said that the Ray Mining Company's interests in South Africa have been hampered by the Transvaal War, forcing the company to discontinue operations on all its holdings, both in Africa and in the United States.

CALIFORNIA.

Calaveras County.

(From Our Special Correspondent.)

Beckley Consolidated Gold and Silver Mining Company.—This company has been organized with a capital stock of $200,000 to work quartz claims a few miles from Milton, northwest from Salt Spring Valley, known as the Beckley, Buckeye and Franklin claims. Several shafts show the vein to be about 6 ft. wide and rich in free gold. A mill is to be erected.

Gwin.—At this mine, 4 miles southwest from Mokelumne Hill, the 80-stamp mill is running on ore taken from the 1,000, 1,200, 1,300 and 1,400-ft. levels, crushing about 10,000 tons per month. The shaft is down 1,660 ft.; 190 men are employed.

Lucas.—A new air compressor plant has been installed, and the mill newly equipped at this mine at Mokelumne Hill. The mill is running on ore from the lower tunnel, which is now in 700 ft. The management claim that with their present supply of water they are mining and milling ore at $1 per ton.

Romarggi.—This claim, about 2 miles south from Angels, is reported sold to an English syndicate for $35,000 cash.

El Dorado County.

(From Our Special Correspondent.)

Strahle Slate Quarry.—This quarry, near Kelsey, is being worked on an extensive scale with a large force of men. A second quarry about 1 mile east from the old works has been opened up.

Inyo County.

(From Our Special Correspondent.)

Kearsarge.—These mines, 14 miles from Independence, are to be opened up under the superintendency of J. S. Johnson, for a San Francisco syndicate. A 1,500-ft. tunnel will be run to cross-cut 5 veins. A mill and a cyanide plant are to be erected.

Mazourka.—This placer property, 7 miles east from Independence, is being developed by a tunnel now in 1,000 ft., and the first air shaft has been completed. The main channel was struck at 900 ft., and the tunnel will be pushed to bed-rock.

Kern County.

(From Our Special Correspondent.)

Little Butte.—The new drift being run at this mine at Randsburg, is in 115 ft. following the ore body which is left on the wall for the present. Prospects are good and work is pushed.

Nevada County.

Standard Consolidated Mining Company.—At the annual meeting in San Francisco on February 26th, the following directors were unanimously elected; P. N. Lilienthal, W. H. Oscanyon, N. Westheimer, C. E. Paxton, S. L. Ackerman, Sol E. Scheeline and John W. Pew. P. N. Lilienthal was elected president; W. H. Oscanyon, first vice-president; N. Westheimer, second vice-president; J. W. Pew, secretary; Anglo-Californian Bank, Limited, treasurer; R. Gilman Brown, general manager, and the Farmers' Loan and Trust Company of New York, registry, transfer agency and depository of funds in that city.

(From Our Special Correspondent.)

Lecompton.—This mine on Deer Creek is pumped out and work has resumed. Rood, Voos & Co. are operating the property under a lease.

St. Patrick.—At this mine, in the Washington District, a 500-ft. tunnel is to be run into the hill, which will give depth enough to allow the ledge to be thoroughly tested.

Riverside County.

(From Our Special Correspondent.)

Menifee.—The test run of the new mill at this mine, 8 miles south from Perris, was satisfactory. The 10-ton cyanide plant has also been completed. The mine is to be pumped out and developed.

San Bernardino County.

(From Our Special Correspondent.)

Bagdad.—Twelve men are employed at this mine, south of the Gentry group, in the Buckeye District; $70 ore is being hoisted from the 50-ft. shaft. John Suter & Company are owners.

John R. Gentry.—At this group of claims, in the Buckeye District, 8 miles south from Ludlow, 6 men are working. Another carload of ore, rich in gold and copper, has been shipped to the smelter at Pueblo. About 3 more carloads are ready to ship, while a large amount of ore is in sight. 7 ft. of the vein averages $24 per ton in gold.

Rose Gold Mining Company.—This company, whose mines are at Victor, claims to mine, mill and cyanide the ores of its property at a cost of $2.44. The mill is provided with a series of crushers, and 33 tons of ore per shift of 11 hours are treated with 1 engineer, 1 crusher feeder, 1 laborer in the vat and 1 solution man operating the plant. The cost per ton is as follows: Mining, $1.25; milling, oil, fuel, cyanide of potassium, lime and zinc, $1.09; discharging the vat, 10c.; total, $2.44.

San Diego, County.

(From Our Special Correspondent.)

Barona Copper Mining and Smelting Company.—This company has been organized with a capital stock of $500,000 for the purpose of developing a large ledge of copper at San Vincente, which shows remarkable surface indications. One prospect shaft has been sunk 35 ft., showing a ledge of ore 23 ft. wide assaying from 8% to 20% copper. This shaft is to be sunk 200 or 300 ft.

San Luis Obispo County.

(From Our Special Correspondent.)

American Exploration and Development Company.—This company is preparing to prospect the quicksilver property at Pine Mountain, near Cambria. The necessary machinery has arrived.

Shasta County.

(From Our Special Correspondent.)

Mammoth.—The bond on this copper property, near Copley, in the Backbone District, has been extended until April 5th, when the purchase price of $100,000 and the 15 days' penalty of $1,500, must be paid. The owners feel confident the sale will go through.

Texas & Georgia.—These mines at Dry Diggins have been bonded for 18 months by the trustees to H. C. Woodrow, who is said to represent Eastern capitalists. Work will begin at an early date.

Trinity County.

(From Our Special Correspondent.)

Trinity Gold Placer.—Only 10 men are working at present, drifting at the upper mine about 4 miles above Union Creek.

Yellow Rose of Texas.—At this mine on Coffee Creek, a small rock breaker, concentrator, engine and boiler are being put in.

Yuba County.

(From Our Special Correspondent.)

Good Title.—This mine, at Indiana Ranch, 14 miles southwest from Camptonville, will be started up May 1st. The mine, which has been idle for some time, was opened by a 250-ft. cross-cut tunnel to the vein, with several hundred feet of drifts and a winze, all in ore.

COLORADO.

Lake County.

(From Our Special Correspondent.)

Ore Output.—The tonnage for February was almost 55,000 tons, an excellent production considering that railroads were hampered about 10 days by heavy snow. The first week in March shows a material increase.

A. M. W.—This consolidation is getting its machinery in. The new pump at the 730-ft. station throws 1,200 gal. a minute a height of 1,200 ft. Hoisting is through the Brooklyn shaft at the 700 ft., where it is connected with the Wolftone and Maid of Erin.

Banker Mining Company.—This New York proposition, headed by John Guth, has resumed sinking in the Banker at the 900-ft. level, and will go to the level of the Yak Tunnel.

Boston Gold-Copper Smelting Company.—This pyritic plant is handling about 250 tons daily with one furnace. Manager Duvall has returned from a 3 months' trip to Boston, and announces that important improvements are to begin.

Col. Sellers.—Zinc ore shipments are steady from the old dump of the Sellers to the New Jersey Zinc Works, which owns the property, and it is understood expects to work extensively the zinc ore bodies.

Fanny Rawlings Mining Company.—Stations are completed and the contract for sinking the lower levels has been let. Just sufficient ore is shipped to pay running expenses.

Home Mining Company.—It is intended to make a product of 10,000 tons a month from now on.

Kentucky Boy.—In this property on Taylor Hill, operated by the Taylor Hill Gold Mining Company, at 150 ft., a small vein has been cut between the lime and the porphyry, which assays as high as 8 and 10 oz. gold.

M. N. Fraction.—This is the richest mine in the West for the territory embraced. The most important work now is drifting at the 630-ft. to a known ore body.

New Monarch Gold Mining Company.—About 30 tons a day are shipped from the Winnie shaft. Sinking has resumed on the Lida for the sulphide contracts.

Nubian Mining Company.—This downtown property, through its Midland shaft, has opened a remarkable body of high-grade chloride that averages 3 to 4 ft. wide and some huge chunks show 1,200 to 1,500 oz. silver to the ton.

President.—This property, on the northwest slope of Brece Hill, is shipping 10 to 15 tons daily from the workings next to the Ballard line. The mine has been operated several years, but these are the first shipments.

La Plata County.

(From Our Special Correspondent.)

Annie.—This property on Tower Mountain, worked by Colmer, Lewis & Rogers, recently disclosed a large body of high-grade lead ore.

Kendrick Promotion Company.—Levels Nos. 3 and 7 are being driven on ore on the Mineral King group owned by this company, on Cement Creek. An upraise of 140 ft. is being driven between levels Nos. 2 and 3, in which an 18 in. streak of high grade ore was recently opened.

Sampson Mill.—This plant, together with the American tram line, is in working order; 10 stamps are used, but 15 more will shortly start, and the big ore bins will be finished soon. The force is shortly to be increased by 20 men.

Silvery Pocket District.—This district is located 16 miles south of Bedrock, and a vein has just been discovered which gives good returns in copper and silver, and shows considerable uranium.

Sunrise.—This property, owned by Galloway Brothers & Hamilton, has been bonded to New York parties. Considerable development has been done, and every drift shows large bodies of low grade copper ore. A carload was recently shipped which netted, over expenses, $100 per ton.

Mineral County.

Mammoth Mountain Consolidated Mining Company.—This company, which leased the Nancy Hanks, Mammoth and Mary Anderson claims at Creede, has opened an 18-in. streak on the Nancy Hanks, giving from 40 to 100 oz. silver.

Routt County.

(From an Occasional Correspondent.)

Bromide Mining and Milling Company.—This company recently shipped 3 carloads of copper bullion, the last of a series of shipments, from their smelter at Camp Douglas. The bullion shipped averaged 97½% pure and showed successful work for the furnace. The smelter has now closed down, owing to the difficulty of hauling ore and to allow development work to be pushed, but it is the intention of the management to blow in again in May, for the summer.

San Miguel County.

(From an Occasional Correspondent.)

Cimarron Mill.—This mill has been rebuilt with double its former capacity and is running full time.

Gold Run.—The Gold Run cyanide plant will be increased by the addition of tanks.

Japan Mines Company.—Walter Beam of Telluride, manager, has machinists tearing out the interior of the mill, in Savage Basin, preparatory to rearranging the machinery. It is expected to have the work completed by the time water enough flows for milling and concentrating. The plant will then be capable of handling 60 tons of mineral daily, which will yield from 1½ to 2 tons of concentrates. A large electric pump will shortly be installed where the tunnel cuts the vein, and the lower levels will be worked more extensively. There are large areas of ore blocked out.

Ophir District.—The Suffolk mill has resumed operations after several months' idleness. Real & Thomas are rushing work on the McCarthy with a force of men. The Carribeau is shipping 2 to 3 carloads of concentrates per week. Negotiations are under way for sale to an Eastern company. The Butterfly mill is dropping 5 more stamps since March 1st.

Saw Pit Gold Mining and Milling Company.—The vein in the Slide tunnel at Saw Pit is 5 ft. wide and free milling. A stamp mill has been purchased and will be rebuilt at once on the company's ground.

Smuggler-Union Mining Company.—This company's new mill at Pandora, 1 mile above Telluride, is now in operation, but will require some time to get running smoothly, as it has a capacity of 200 tons in 24 hours. The ore is concentrated 6 and 8 tons into 1. Triple concentration has been introduced and it is expected that a very close saving will be effected. The old mill, which has a capacity of 175 tons in 24 hours, is also running, and the 2 combined will soon dispose of nearly 400 tons of mineral daily. The mines this summer will no doubt employ over 500 men, including leasers. Arthur L. Collins of Telluride is manager.

Tomboy Gold Mines Company.—The force has been somewhat increased and the mine is again a big shipper to the Denver mint.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

American Eagles.—No work is done now on these claims on top of Bull Hill, owned by W. S.

Stratton of Independence, though a large amount of work has been done. Mr. Stratton is at present doing a large amount of work on the John A. Logan.

Railroads.—Considerable grading is going on around the hills of the district. The Golden Circle is grading from Vista Grande to the Hoosier Mine, over Globe Hill and Gold Hill, across Poverty Gulch, and into Old Town, though at present stopped from working in the town by a temporary injunction instigated by the residents in that portion of the town. The new electric of the Colorado Springs & Cripple Creek Railroad is also doing a large amount of grading all over the district.

Victor Gold Mining Company.—All the work being done at this mine at present is a little development work. This consists principally of drifting. No ore has been shipped from the mine for some months. This mine has made a splendid record in the past and it is to be hoped it will soon again become a shipping mine.

Wild Horse.—A new 3-compartment shaft is being sunk on an adjoining claim, the Bertha, belonging to the same company. The company is controlled by the Woods Investment Company, and only recently acquired the Bertha and T. F. T. claims. The Wild Horse has produced considerable ore and the company has paid several dividends. The new shaft is to have a stone collar and is to be fitted with steel doors so that in case of fire no damage will be done to the interior. The framework for the shaft house and gallows frame is being put up.

FLORIDA.

(From Our Special Correspondent.)

Phosphate Mining.—Mining is pushed in anticipation of a big demand during next fall and winter. Sales for 1901 have been reported as transacted at 8½ and 8¾d. c. i. f. With the remaining unsold product of 1900 nothing has been done so far, and it will in all probability be sold at a small reduction, unless some of the miners fall short in carrying out their present contracts.

Levy County.

(From Our Special Correspondent.)

The large washer at Morriston, recently erected by Mr. Potter, is now in operation.

Messrs. Hood & Hubbard have a new plant under construction and have already begun to uncover their deposits, between Archer and Williston.

Southern Phosphate Company.—This company will erect a new washer at once on its property near Archer.

IDAHO.

Blaine County.

Gold Belt Mining Company.—Charles D. McLure, of St. Louis, Mo., John Doniphan, and Richard E. Turner of St. Joseph, Mo., Matt H. Williams, James A. Doniphan, Thomas S. Doniphan, of Blaine County, have sold to this Missouri company, in consideration of $30,000 cash, all of the Black Cinder, Camas No. 3, Treasure Trove, Edna, Burning Moscow, and Sarah lode claims on the Hailey gold belt.

Idaho County.

A vein of gold ore 18 in. wide, with a rich streak 6 in. wide, is reported uncovered 2 miles northeast of Elk City, on the American River, by I. K. Lamoreaux.

Iola.—At this mine at Warren, about 2,500 ft. of tunneling has been done. A 2-ft. body of free milling ore going $35 in gold and silver is reported cut at the bottom of a 100-ft. shaft. The mill has a capacity of 30 tons daily. About 30 men are employed under J. A. Wood, superintendent.

Owyhee County.

Cumberland.—At this Silver City mine a large force is at work getting the mill in shape. The mill has been enclosed, and setting the machinery has begun.

War Eagle.—About 40 men are on the payroll. The tunnel is run by machine drills and is in about 575 ft. Mules will be put in to haul the rock. Three 8-hour shifts are now worked. A 14-in. ventilating pipe, with blower, gives plenty of air in the tunnel. Inch and a quarter No. 1 giant powder is used in blasting, about 100 lbs. per day. The face is in hard, close-grained granite and no timbering is required.

Washington County.

(From Our Special Correspondent.)

South Peacock.—In the bottom of the shaft at 215 ft. good ore has been struck again in this mine at Cuprum. The ore was cut out in the shaft at 140 ft. by a horse and now reappears; The ore is stated to be bornite. The size of the ledge is not known yet.

MICHIGAN.

Copper.

Baltic Mining Company.—The company has ordered a 40-drill compressor from Fraser & Chalmers of Chicago.

The site for the new mill at the mouth of Salmon Trout River is being cleared off, and a line to the mill has been surveyed from the Atlantic Mine track. The mill as planned is to have 4 heads with a capacity of over 500 tons of rock each daily. In place of the usual finisher jigs Wilfley tables may be used, experiments having shown that 2 of these tables can replace 12 jigs.

Isle Royale Consolidated Mining Company.—N. F. Leopold and wife have sold 160 acres of land to this company, being s w ¼ of s w ¼ of section 10, n m ¼ of n w ¼ of section 15, and the east ½ of the s w ¼ of section 9, all in township 54, range 34. Consideration named in deed is $1, but $40 in revenue stamps attached to document indicates actual consideration of $40,000.

At the annual meeting in New York, March 5th, 74,000 out of 100,000 shares of stock were represented. The old directors, John Stanton, J. R. Stanton, Joseph E. Gay, W. E. Stuart and Cameron Cunie, were re-elected.

Quincy Mining Company.—The company's copper output for February was 747 tons, compared with 773 tons in February 1899.

Iron—Marquette Range.

Lorraine.—Corrigan, McKinney & Company have thrown up their option on this Cascade Range property near Palmer.

Princeton.—At this mine near Swanzy, controlled by Tod, Stambaugh & Company, the output this year will be taken from the upper levels. Explorations south of the old workings have resulted in striking a considerable deposit of blue ore, while that now mined is brown, and the new find shows much less moisture. The old levels are showing better than was expected.

MINNESOTA.

Iron.—Mesabi Range.

(From Our Special Correspondent.)

There are indications that running north and west for a mile or 2 from the Franklin and Commodore mines, through the Jones, Humphreys, McEwen, Fay and adjoining lands, there is some of the finest ore yet found on the entire Mesabi range. One 120-acre tract is under option at $1,500,000, and mines are being developed on other portions of it. Coarse, lumpy ores running as high as 68% iron, and as low as .020% phosphorus, have been taken from parts of this area.

Corrigan, McKinney & Company.—The lease of what is to be called the Stevenson, was filed last week. The minimum royalty is to be 12½c. a ton when the annual output exceeds 500,000 tons; the minimum output is 200,000 tons, and on this amount, and up to 300,000 tons, the royalty is 20c. On oil ore mined in excess, and up to 400,000 tons, the royalty is 17½c.; on all between 400,000 and 500,000 tons the rate is 15c. The present rail rate to Lake Superior is 80c. a ton, but should this be reduced to below 60c., any drop from 60c. is to be added to the royalty. Corrigan, McKinney & Company agree that all ore mined from the Commodore Mine, Mesabi Range, shall be hauled over the Eastern Minnesota road, which is virtually the owner of the land in which the Stevenson lies. It is also expected to mine and ship from this mine not less than 200,000 tons this year, and the average analysis of the shipment is expected to be as follows: Iron, 63.40%; silica, 5.10%; phosphorus, .040%; sulphur, .009%; moisture, 10%.

Fay Mining Company.—This company has been formed at Virginia, to work 120 acres along the north line of T. 58, R. 17, the n w n w of section 4, and the n ½ of n e section 5. Explorations have shown high-grade ore, and a lease has been made from the Midway Company at 30c. a ton. Two shafts will be sunk and it is hoped to do some mining this year. M. L. Fay is president, C. M. Pearce vice-president, and H. Roberts secretary and treasurer. S. J. Roberts is mining captain.

Lake Superior Consolidated Mines.—Interests connected with this company have closed a deal for 120 acres in T 59 R 20, from the Foster Lumber Company, C. d'Autremont, and others, for $250,000. The purchase is of the fee title.

Drillers under the charge of E. F. Sweeney have begun work in the village of Virginia. If an ore-body is found here it will result in the removal of the village to a new location, as has been done at Eveleth, and as will be done at Hibbing. There is ore on three sides of Virginia and a lake on the fourth side.

Options for a lease on lands in this ¼ of 32, T 58 R 20, have been given to Jas. H. Long, and explorations will begin at once.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The weather during the first part of the week was unfavorable and the roads were in wretched condition, but the sales show a marked increase over the previous week. Many of the mills are shut down on account of the bad weather, particularly those run by companies capitalized for more than the properties can stand, but all the mills producing high-grade ore are running full time. A number of mills sold their output, but did not get a pound loaded.

The Colonial Zinc Company's mill at Belleville was shut down for repairs, and the best price paid was $33 per ton. The bulk of the ore sold at from $30 per ton to $32 for 60% ore. Lead was unchanged, selling at $27.50 per 1,000 lbs. During the corresponding week last year, top-grade zinc ore sold at $43 per ton and lead at $25 per 1,000 lbs. The output was less than last week by 220,230 lbs. of zinc and 17,330 lbs. of lead, but owing to the prevailing high prices for zinc ore, the value was greater by $37,074. For the first 9 weeks last year the sales were less by 4,386,830 lbs. of zinc and 1,535,460 lbs. of lead, but the value was greater than this year by $13,896. As compared with the previous week, the sales show an increase of 2,774,280 lbs. of zinc and 159,290 lbs. of lead, and the value was greater by $42,564. Following is the turn-in by camps:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	2,132,870	362,320	$42,603
Galena-E pire	2,419,760	315,890	41,870
Carterville	1,666,310	209,390	30,870
Webb City	742,650	113,230	13,888
Oronogo	804,210		11 957
Aurora	960,000	21,530	13,216
Belleville	258,960	5,630	4,169
Duenweg	856.550	35,400	12,967
Central City	189,270	6,820	2,834
Cave Springs	95,900	3,020	1,484
South Jackson	7,640	17,870	602
Carthage	168,170	.....	2,648
Stotts City	137,510	.....	2,131
Granby	231,000	11,000	3,800
Lehigh	75,150	1,730	1,228
Alba	43,970	.....	660
District total	10,359,670	1,073,890	$179,584
Total 9 weeks	82,477,470	9,209 670	$1,484,175

Patrick Murphy of Joplin has purchased of Joseph C. Bailey 160 acres of land just west of Carl Junction, for $16,600. W. F. Hammett has filed a conveyance to the Old Colony Zinc and Smelting Company of a tract of land north of Carl Junction for $5,000. The Lisles 160-acre tract of land at Aurora was sold February 27th for $16,000 to John Skinner and D. K. Wetrick of Astoria, Ill., who will develop the tract this spring. The Miles farm on the Belleville road, 3 miles north of Joplin, has been sold to George R. Hastings for $15,900. Chas. F. Haney has sold the Pilot mill and lease of 8 lots of the B. Cooley land at Galena for $30,000. The lease was formerly known as the Ohio ground, and is one of the best pieces of property at the price that has been sold lately.

New Companies.—The Colorado & Missouri Lead and Zinc Mining Company, of Joplin, has a capital stock of $500,000. Most of the directors are from Missouri, and J. T. Burkholder, of Colorado Springs, Colo., is president. The company owns 40 acres at Tuckahoe, which has produced well, and will be reopened and worked with new machinery. The Pullman Lead and Zinc Mining Company, of Neosho, Mo., with $100,000 capital, has been incorporated by C. D. Pullman, Chicago; E. F. Murphy, Goodland, Kan.; J. M. Rush, W. W. Clay and J. B. Wagor, of Neosho, Mo. The Binghampton Mining Company, with a capital of $100,000, is to work in the Oronogo District. It holds leases covering several hundred acres, including the Tutt land, close to Oronogo Junction, a 300-acre tract at Neck City and the Seaber farm, 6 miles from Oronogo. The Little Frances Lead and Zinc Company, with $100,000 capital, has been incorporated by J. D. Kelley, of Carthage; Ernest Robyn, of St. Louis, and L. Hermann, Joplin. The White Star Mining Company, of Carthage, paid up capital $24,000, has been incorporated by T. T. Luscombe, P. N. Wiggins, William McMillan and E. McWilliams, of Carthage, and Albert Raines, of Joplin. The Joplin Land and Mining Company, one of the most important corporations lately organized, owns 15,000 acres in the eastern part of McDonald County, and from 2,000 to 3,000 acres in the Joplin and Granby districts. The capital is $125,000, fully paid up, and the incorporators are E. O. Bartlett, Joplin, president; Governor Lon V. Stephens, treasurer; directors, Gib Barbee, Dan Collins and Pat Murphy, all of Joplin. The Frisco Mining Company is to work a 10-acre lease at Aurora. George E. Dyson, of St. Louis, is secretary. The Union Zinc and Lead Company is composed of Indiana parties, who have leases on the Hawkeye ground at Cave Springs, and on the Badger land at Central City, with some good mill propositions. The Paxton Zinc Mining Company, of Joplin, has been incorporated with $100,000 capital.

MONTANA.

Deer Lodge County.

(From an Occasional Correspondent.)

Mammoth Gold Mining Company.—It is announced that Dr. H. W. Martin of Chicago, representing a Chicago syndicate, has purchased of Larrable Brothers of Deer Lodge the entire property of this company, at Coloma. The mine will be reopened May 1st and worked with a full force, and steps are being taken to put the machinery in shape. The mine is equipped with 3-drill air compressor, hoists, etc. It is not known whether the ore will be worked at the mill or sent to the Montana & Denver Reduction Company for treatment.

Washoe Copper Mining Company. This company is one of the allied concerns of the Amalgamated Copper Company. It has increased its capital stock to $20,000,000, and shows many signs

of increased activity. It has been known for some time that important extensions were contemplated. The acquisition of the Carbon Coal Company at Carbonado, and of the Big Blackfoot mills at Bonner, as the Washoe Copper Mining Company, lumber department, tends to show that this company will become an independent concern.

Anaconda Copper Mining Company.—At the upper smelter at Anaconda all the small matte furnaces have been replaced by much larger ones, adding about 50% to the capacity of the works. The 2 McDougal roasting furnaces, 15 ft. in diameter and 18 ft. high, are about completed, says the Anaconda "Standard." These furnaces are rated at a capacity of 35 tons a day each of concentrates, and are provided with 5 stationary floors of brick and one—the lower—of cast iron. Each floor has an opening through which the concentrates drop to the floor below. In the center of each furnace is an upright column or center stand, to which are fastened the arms of the revolving plows, which keep the material well stirred and work it down from floor to floor. The concentrates are fed to the furnaces through hoppers. The line shaft for the general transmission of power passes over the tops of the furnaces, the belting connecting with pulleys at their base, which, by shafting and cog wheels cause the center stand to revolve at the rate of one minute to a revolution. It is understood that several more of these furnaces—probably 6—will be installed. They are manufactured at the Anaconda foundry.

The new No. 6 Gates crusher at the upper concentrator has a capacity of 800 tons in 24 hours. More jigs, relatively, are required for the crusher and its accompanying rolls than for stamps even when the same quantity of material is handled, owing to the fact that the crusher leaves the ore coarser and portions that are not sufficiently rich to go to the tank houses as concentrates are re-ground and re-jigged.

Granite County.

(From an Occasional Correspondent.)

Garnet Mining District.—Dr. Mussigbrod, successor to Mitchell & Mussigbrod, and owner of many mining properties in this district, is now installing an air compressor to work drills in the Red Cloud and Lead King mines, in Last Chance Gulch. Eighteen thousand tons of ore of a reported value of nearly $500,000 is now blocked out, and is worked at the company's mill by amalgamation and concentrated by Wilfleys. The first class is shipped to Butte for smelting.

Copper Cliff District.—The Copper Cliff Mine lately shipped 2 carloads of high-grade ore as a result of extensive developments made by the owners, Messrs. Adams, Shipley & Keeley. Linneman & Schmidt of Butte had a bond on this property for $40,000, which expired lately. They did much development, but were not satisfied with appearances, and relinquished the bond. As a result of new work by the owners the former leasers are now satisfied, and have bonded the mine again at an advanced figure.

Montana & Denver Reduction Company.—The new mill is running regularly with 2 shifts, to care for the ore which is being rushed in ahead of spring thaws. W. Gleason, the amalgamator, has resigned, owing to sickness, and Mr. Price from Phillipsburg has taken the place. The slimes are run into artificial reservoirs and will be worked later. The extraction, without taking into account the slimes, is about 90%.

Jefferson County.

Basin Gold and Copper Mining Company.—Edward R. Holden, Eastern agent, has filed a petition in bankruptcy in New York with liabilities of $279,455. His assets consist of 250,000 shares of stock of the London Gold Mining Company of Colorado, $250,000, actual value unknown; a life insurance policy of $10,000; real estate, near Denver, $1,000, and cash $25. Among the largest creditors are Charles Graham, Philadelphia, $160,903, secured by 43% of the stock of the Aspen Union Smelting Company, of Aspen, Col., nominal value $172,000, actual value unknown; receiver of the State National Bank of Denver, $56,238, judgment obtained in New York on May 8, 1899; receiver of the Union National Bank of Denver, $32,128; G. B. Wheeler Banking Company, of Aspen, Col., $23,532.

In an interview with Mr. Edward R. Holden in regard to the filing of his bankrupt petition, by which he sets aside $279,455 in liabilities with assets of $423,000 nominal value, Mr. Holden states that the liabilities set forth were satisfied under a contract entered into on the 24th day of April, 1895, by which the creditors, being all National banks, assumed the obligations of the Holden Smelting and Milling Company, of which Mr. Holden was the endorser, and received in consideration therefor the entire plant of the Holden Smelting and Milling Company, at Aspen, Col. The said National banks then became insolvent, and the receiver appointed refused to acknowledge the contracts previously made.

Madison County.

Clipper.—This mine at Pony is being opened by W. C. McKaskie, through a 2,000 ft. tunnel. The ore is gold and is hauled by wagons 2 miles to the railroad and shipped to Butte.

Missoula County.

(From an Occasional Correspondent.)

Amador Copper and Gold Mining Company.—This company's properties are about 12 miles south of Iron Mountain. The face of a 130-ft. tunnel shows 5 ft. of concentrating ore carrying copper and some gold. D. E. Mackennon of Wallace, Ida., is secretary of the company.

Wallace District.—The Copper Bell Mining and Milling Company of Milwaukee shows activity. A tunnel 150 ft. long is to be run on the Clinton claim, at Clinton. The largest price paid for the claims was $10,000, to David Lewis for 4 full claims, which form the principal part of the company's holdings.

Park County.

Butte & Yellowstone Coal and Coke Company.—This company's property, owned by H. L. Frank and A. O. Newton, is under option by the Montana Coal and Coke Company at a price said to be nearly $100,000. The property embraces 1,000 acres near Horr, with all improvements.

NEVADA.

Lincoln County.

St. George Copper Mining Company.—This company has shipped to Modena 50,714 lbs. of copper ore and 8,760 lbs. of regulus. The smelter has closed down pending the arrival of a new water jacket.

NEW MEXICO.

Grant County.

Bayard Smelting and Mining Company.—This company has increased the capital to $1,000,000. The meeting of the stockholders, at which the increase was ordered, was in Philadelphia. The following directors were elected: Edward H. Patton (president), Simon Grantz, John W. Mack, Barclay H. Warburton, W. D. Murray, H. Niles. The mines are near Central. The new shaft on the Texas is down over 60 ft. The enlargement of the mill and the erection of new structures are well under way. The force now numbers about 60 men.

NEW YORK.

Hamilton County.

Hope Mica Mining Company.—This company was recently incorporated to mine mica, feldspar and other minerals near Hope. The capital stock is $30,000 and the following Saratoga men are directors: W. C. Gailor, W. B. Milliman, C. Vandenburg, R. F. Knapp and G. C. Hodges.

NORTH CAROLINA.

Davidson County.

(From Our Special Correspondent.)

Silver Hill.—Several pieces of native silver were on exhibition in the office of Richard Eames, Jr., Salisbury, N. C., from this mine. Small shipments of ore continue to be made.

Rowan County.

(From Our Special Correspondent.)

Gold Hill Copper Mining Company.—This is the name of the new company working the Gold Hill Mines, incorporated under the laws of New Jersey with a capital of $5,000,000 in shares of $10 each. It has received 3 boilers of 150 H. P. each, and is installing these with hoisting and pumping machinery at the Randolph shaft. It has always been reported that there are immense reserves of copper sulphurets in the stopes which were avoided when working for gold.

Union Copper Company.—This company will start its large concentrating plant about March 7th. It has thousands of tons of ore on the dump ready for the mill. President W. G. Newman was at the mine from New York on aMrch 3d. The company is making application for $300,000 insurance on its plant.

OHIO.

Coal Miners' Wage Scale.—At the joint conference of the officials of the Coal Operators' and Mine Workers of Ohio, at Columbus, last week a wage scale was determined upon as follows, to go into effect April 1st, 1900, and to continue one year from that date: Pick mining, screened lump, 80c. per ton; run of mine, 5/7 lump price or 57 1/7 c.; entries, dry, per yard, $2; break through in entries, per yard, $2; break throughs in rooms, $1.39; room turning, $3.03; track layers per day, $2.28; track layers' helpers per day, $2.10; trappers per day, $1; machine haulers, cagers and drivers per day, $2.10; water haulers per day, $2.10; timber men per day, $2.28; pipe men per day, $2.22; all other inside day labor, $2.10; dumpers and trimmers per day, $2.10; couplers, greasers, slack haulers, firemen, engineers, carpenters, blacksmiths, cleaners, hoisters and all other outside day labor, special prices according to the nature of the work. Machine mining, cutting by Jeffrey styles of machine, rooms, 9c.; cutting by Jeffrey machine, entries, 12½c.; cutting by punching machine, entries, 14¾c.; loading in rooms, 41c.; loading in rooms, with hand drilling, 44c.; loading in entries, 51½c.; loading in entries with hand drilling, 54½c.; loading break-throughs in rooms with hand drilling, 51¼c.; drilling by hand, 3c.; drilling by machine, ton, 2¼c.; room turning, cutter and loader, entry price.

The agreement was signed by W. H. Haskins, D. H. Sullivan, Conrad Wein and David Hardy for the Ohio miners, and by J. S. Morton, E. A. Cole, V. Ferguson and T. E. Tetrick for the Hocking Valley operators.

OREGON.

Baker County.

Virtue Consolidated Mines Company.—At the Virtue Mine near Baker City the 800 ft. shaft is pumped out to the 350 ft.

PENNSYLVANIA.

Anthracite Coal.

The new washery erected by Madeira, Hill & Company, of Philadelphia, on the site of the old Preston, No. 2, colliery, at Girardsville, Pa., for the purpose of washing the banks of these abandoned workings, has begun operations. The washery when in full operation will ship about 500 tons of coal daily and will employ 250 hands.

Coalbrook.—This new breaker has been erected at Carbondale to prepare the output of all the Delaware & Hudson mines in the vicinity of Carbondale. The breaker will prepare 6,000 tons per day, and is said to be the largest in the world. A storage plant, with a capacity of almost 500,000 tons, has been constructed to care for the surplus production during the quiet season.

Dodson.—Excavation for this breaker at Plymouth has begun. It will take the place of the breaker destroyed by fire on July 13th. The new structure will be 90 ft. long, 72 ft. wide and 85 ft. high. The dump will be at the head of the shaft and the contents of the mine cars will there be dumped into conveyors, which will carry the coal to the breaker. The capacity of the plant will be 1,000 tons a day. It is being erected by the Plymouth Coal Company.

SOUTH DAKOTA.

Lawrence County.

(From Our Special Correspondent.)

Bullion.—This mine, which has been purchased by Dr. H. H. Muggaley of Chicago, is being retimbered and fitted out with machinery for a steady run.

Cleopatra Mining Company.—This company has completed work on a 50-ton cyanide plant at the mine in Squaw Creek District. The old Hugginson Hotel, erected during the carbonate boom, is being torn down and placed at the mine for the cyanide building.

Galena Mining & Smelting Company.—H. H. Armstead, general manager, states that for several months past the company has had 50 men at work on different places and that a number of rich prospects have been found. In the Eureka shaft, on the Alert claim, a 7-ft. vertical of pyritic ore has been encountered. The shaft is to be continued to the lower ore contact. At the Eureka shaft there is a steam hoist, with pumps and electric light plant and air compressor. The dynamo lights the Hoodoo workings, half a mile distant.

Horseshoe Mining Company.—This company will put in a cyanide annex at the Kildonan chlorination plant at Pluma.

Spearfish Cyanide Plant.—This plant is in operation again. It is owned by F. M. Wall of Ragged Top, who is treating about 20 tons of ore daily.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending March 3d there were sent forward from the different smelteries 14 cars, or 600,258 lbs., lead-silver bullion; 7 cars, or 335,937 lbs., copper bullion. In the same week the shipments of ore and concentrate products from the several camps to smelteries outside of the State aggregated 88 cars, or 4,349,270 lbs., lead-silver products and 1 car, or 67,040 lbs., copper ore.

Cyanide Products.—For the week ending March 3d the receipts of products from cyaniding mills settled for at Salt Lake were contributed by the Mercur, Sacramento and Star, all from Tooele County, a gross weight of 1,205 lbs., value about $36,000.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week ending on March 3d there were sent out from the 3 railroad points of the district 82 cars of ore and 2 cars of concentrates, which were contributed as follows: Centennial-Eureka, 29 cars; Swansea, 11 cars; May Day, 10 cars; Bullion Beck, 6 cars; Gemini, 6 cars; Mammoth, 5 cars ore, 2 cars concentrates; Godiva, 5 cars; Grand Central, 4 cars; Ajax, 3 cars; Carisa, 2 cars; South Swansea, 1 car.

Buckeye.—On 300-level an ore find is made, which is liable to prove of considerable size. Emerson & Raines are making good headway in sinking on their new contract.

Carisa.—A shipment of 3 cars of No. 1 copper

rock was made last week. Superintendent Underwood affirms that appearances underground are improved.

Martha Washington. — Difference of views among the managing board has caused a close-down. A special directors' meeting has ordered an underground survey, the auditing of the company's books, and, it is said, an assessment of 1c. is to be levied.

South Swansea.—Final touches are being given to the new shaft. Manager Rowe Wheeler and Engineer C. P. Brooks were at the mine last week, making measurements, etc., for the Four Aces suit.

Salt Lake County.

United States Mining Company.—The first 10% payment on bond subscriptions was made in Boston, March 1st, at the American Loan and Trust Company. The following board of directors was elected: Robert D. Evans (president), Jos. S. Ricker of Portland, Me., Herbert F. Winslow, Frederick Aver, Richard A. Parker, Henry C. Thatcher and Stillman F. Kelley.

(From Our Special Correspondent.)

Bingham Copper and Gold.—The ledge is cut in crosscut tunnel, 250 ft. under main workings, the first assays showing above 7% copper, $2.75 gold, 4 oz. silver per ton. Mr. W. H. Nutting confirms the announcement that a smelter, of a minimum capacity of 300 tons per diem, is to be built, and affirms conditions are favorable for turning out a superior matte product.

Jersey Blue.—Manager John C. Dugan has bought the Albatross, I. X. L., and Elmore lode claims adjoining Jersey Blue territory, of D. J. K. W. Bracken. Exploration of this tract is soon to begin.

Red Wing.—Messrs. L. H. Curtis, W. C. Orem, Gill S. Peyton, Ed. McGarrick, J. J. Coram and W. H. Tibbals are a committee to dispose of 100,000 treasury shares, the proceeds to be used to take up options on adjoining ground. There was talk of a voluntary assessment, and there is friction as to past methods. A temporary close down has occurred.

Shawmut.—Of the 200,000 shares capitalization, 150,000 shares go to Eastern folk. The State Street Trust Company, of Boston, is transfer agent of the new company, which owns 9 claims, embracing 120 acres. It is purposed to erect a concentrating mill of 100 tons capacity at the outstart. A statement signed by Edward L. Sprague, president, Edward F. Barnes, treasurer, and George W. Crocker, secretary, Boston members of the board, pays a pleasant tribute to General Manager W. B. Andrew, who is vice-president, and also to Mr. Duncan McVickie, consulting engineer.

Summit County.

(From Our Special Correspondent.)

Daly.—The report of the special committee appointed to examine the books and the property is to be printed and sent to each stockholder. The death of Richard Mackintosh made a vacancy in the directorate, which was filled by David McKenzie. Officers for the current year are: R. C. Chambers, president; David McKenzie, vice-president; J. B. Haggin, treasurer; C. L. Rood, secretary.

Daly-West.—On March 1st Jacob E. Bamberger became manager, in place of Mr. John J. Daly. Receipts for ore sales for February were $123,774 and operating expenses $27,315, leaving $96,459 to represent the month's earnings.

Ophir Hill Consolidated Mining Company.—Incorporation articles were filed March 3d; capitalization, $250,000 in $1 shares. Officers and directors: W. A. Clark, president; Charles W. Clark, vice-president; E. W. Clark, treasurer; A. H. Wethey, secretary, and Frank Pierce. Senator Clark owns all but 5 shores. Those best informed aver that this is to prove the most noteworthy lead-silver concentrating proposition in Utah.

Park City Shipments.—In the week of March 3d the ore and concentrate products shipped amounted to 2,864,690 lbs. made up as follows: Silver King, crude, 718,200 lbs., concentrates, 360,175 lbs.; Ontario crude, 898,700 lbs.; Daly-West, crude, 337,565 lbs., concentrates, 347,065 lbs.; Anchor, concentrates, 202,985 lbs.

Tooele County.

(From Our Special Correspondent.)

Northern Light.—At the annual meeting in Salt Lake, 206,000 shares were represented. Directorate chosen consists of Messrs. E. H. Airis, S. W. Morrison, W. H. Dale, J. H. Brown and J. J. Stewart. Superintendent I. A. Jones' report shows 1,907 ft. of explorations in past 12 months, made up of 942 ft. of drifts, 557 ft. of raises, 283 ft. of crosscuts, all within the mineralized zone, though cutting only small bodies of paying ore, which yielded $9,100—practically all gold and 60% of silver values being won. Shipments of smelting ore were 116 tons, and receipts from ore and cyanide product were $19,000. Expenditures for the year were $7,800 in excess of receipts, and present debt is $5,400.

Uinta County.

(From Our Special Correspondent.)

Mining Concessions from Indians.—Some local friction is stirred up over an alleged movement to secure the right to mine all metal-bearing lodes and other mineral deposits on the Indian reservations. W. H. Timms of Washington, D. C., is the prime mover, and he proposes to pay the Indians a 10% royalty—the same basis as the Raven Company. Most of the Indians, it is said, have given their consent and the approval of the Interior Department is next in order. This procedure shuts out local mining men and prospectors.

WASHINGTON.

Snohomish County.

(From Our Special Correspondent.)

Cape Nome Mining and Prospecting Company.—The principal of this company's asset is a claim about 150 ft. long, abutting the right-of-way of the Great Northern Railroad, and covering some stained gray granite in a rock cut made by the railroad. After bunk and tool houses had been erected and a shaft sunk about 4 ft., work was suspended. There is no sign of a mineral ledge on the claim.

Copper Belle.—At this property, consisting of 9 claims on 2 parallel leads about 300 ft. apart, 4½ miles west of Index, a 10-ton Russell wood burning matting furnace, and a ½-mile aerial tram from mine to furnace, is nearing completion by a Tacoma concern, that has contracted to take its pay from the product of ores treated. About 600 ft. of tunnel work has been done.

Everett & Monte Cristo Railroad.—Mine owners along the line of this road are elated over the announcement that the line is to be rebuilt. At the Canyon Mill the timbers are being cut for rebuilding the washed-out bridge near Robe, at the second crossing of the Stillaguamish; over 50 men are repairing and raising the grade through the canyon.

Index Mining Company.—This company is developing the Wilbur group, 5 claims on South Index Mountain, about a mile from the Great Northern Railroad and 3 miles from Index. Surface improvements consist of buildings, pack trail from mine to railroad, suspension bridge over the Skykomish River, and a wire rope tram 700 ft. long between tunnels 3 and 1. Development work is confined chiefly to 3 levels on the main vein of the 16 to 1 claim, but some preliminary work has been done on the other claims. No. 1, the working tunnel, at the 500-ft. level, is in 500 ft.; No. 2 on the 350-ft. level, 200 ft., and No. 3 at the 200-ft. level., 60 ft. In No. 3 was encountered a shoot of bornite 35 in. wide and 30 ft. long. The vein is from 20 to 30 ft. wide at the outcrop. The principal mineral is chalcopyrite with a 12-in. pay streak of bornite on the hanging wall. Occasionally rich streaks of gray copper and copper glance are found. No stoping has been done. Costs of shipping to the smelter at Everett are $7.60 per ton.

WEST VIRGINIA.

Fayette County.

Red Ash Mine Explosion.—An explosion of fire damp at this coal mine, 2 miles west of Thurmond, on March 6th, entombed 70 miners. The mine formerly belonged to a New York company, but is now the property of a Staunton, Va., company, J. F. Effinger being the chief stockholder. The mine was one of the deepest in the State, and the mouth is in the mountain side, about 700 ft. above the west side of New River. The main shaft is about 1,000 ft. deep. The cause of the explosion is unknown, but its effects were terrific, men being blown to pieces, and the shaft and drifts filled with broken timber and rocks. The fan was damaged, making the work of rescue slow. Over 30 bodies have been taken out so far.

(From an Occasional Correspondent.)

Empire Steel and Iron Company.—This company has secured control of the property and plants of the Sunnyside and the New River Coal and Coke companies. A large part of the coal from those mines will be shipped to Goshen, Va., where it will be made into coke for the use of the Goshen Furnace. Coke ovens are to be built at Goshen.

FOREIGN MINING NEWS.

ASIA.

India—Mysore.

Colar Gold Field.—The total output for the month of January was 41,623 oz. crude gold, the largest ever reported. It compares with 35,360 oz. in 1899 and 34,576 oz. in 1898. The total this year was equal to 37,461 oz. fine gold, or $774,319. The output of the principal mines was: Mysore, 14,727 oz.; Champion Reef, 13,931 oz.; Ooregum, 6,080 oz.; Nundydroog, 3,925 oz.; Balaghat, 1,050 oz.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Mining Outlook.—Numerous reports have been in circulation for some days of a gloomy character, but judging from the preparations being made on the surface, ore shipments will shortly be resumed, at least partially.

Rossland Ore Shipments.—The ore shipments for January and February from Rossland mines amounted to 32,200 tons, valued at $547,400 gross.

Le Roi.—Work has been almost wholly suspended, but it is stated that operations will be resumed soon.

War Eagle.—The new directors are George Gooderham, T. G. Blackstock (vice-president), Hon. Senator Cox, W. H. Beatty, W. G. Gooderham, C. H. Gooderham, A. E. Gooderham of Toronto, and C. R. Hosmer of Montreal. The last 2 are new members of the board.

Winnipeg.—Operations have been suspended at this mine in Boundary Division pending an amalgamation with the Brandon & Golden Crown. There are 2 working shafts, one on each property, each sunk 300 ft. It is said that when work is resumed the shaft on the Brandon & Golden Crown will be used.

Nova Scotia—Cape Breton.

Dominion Coal Company.—This company reports shipments in February of 95,400 tons of coal. For the fiscal year, which ends February 28th, the total shipments were 1,671,600 tons, against 1,155,760 tons in the preceding year; showing an increase of 515,840 tons, or 44.6% for the year.

Ontario—Rainy Lake District.

(From Our Special Correspondent.)

Atikokan Iron Company.—Explorations have shown ore 20 ft. wide in one seam, and the tunnel is entering a second seam that shows a width at surface of about 100 ft. The ore is a magnetite, and averages about 60% iron and .025% phosphorus. The location is less than a mile from the new line of the new Ontario & Rainy River Railroad, and about 125 miles west of Lake Superior.

Foley.—This mine has been reopened by the Canadian Mines Development Company, and 25 men are busy.

Golden Crescent.—The shaft is now down 176 ft., with excellent values the entire width of the 4½ ft. vein. Work is being carried along steadily.

Golden Star.—This company has decided to delay the installation of new batteries, and is working heavily under ground.

Colombia.

(From an Occasional Correspondent.)

Mining in Colombia was much interrupted by the recent revolutionary movements. A good many men employed were conscripted for government service, and others ran away to the mountains. Still some mines continued to keep at work. The Frontino & Bolivia Company has a few hundred, and is paying expenses at least. The French Company is also running to a limited extent. At the Sucre Gold Mines they are working over tailings and making expenses. With exchange at 500%, it does not take much gold to pay local costs.

Santa Barbara Gold Placer Company.—This New York company owns a tract of gold placer ground, extending 3 miles along the Nechi River, in the Department of Antioqua. The pay dirt, in some places, is as much as 35 or 40 ft. deep. The native Colombians, in the rainy season, work such gravels, by a crude form of ground sluicing, and get out gold enough to last them till the next season. On the Santa Barbara Company's property a boiler and pump are in position, the gravel is washed in a revolving cylinder, and the values are saved in a 7 ft. wide sluice. Isidore Davidov is superintendent.

COAL TRADE REVIEW

New York. March 9.

Anthracite.

The weather has been severe enough the past two weeks to bring out a lot of buying at inland points. In Chicago territory deliveries are reported better than they were a month ago, and the same is true of the region about Lake Superior. It looks now as though the stocks on hand at Western points were likely to get quite low before lake navigation opens, though everything depends on the weather for the next few weeks, and consequently there will be a good movement in that direction that will relieve the pressure east. Along the seaboard buying is light and the market is quiet. Yards at Boston were well filled in November and early December, and there hasn't been cold weather enough since to reduce supplies seriously, while from now until May 1st buying will be limited strictly to immediate needs. A hundred miles or more inland, however, heavy snows and cold weather have made buying active, particularly through Central New York. At New York City the market is quiet and dull.

Egg coal is in least demand of all sizes and can be had at greatest concessions. The steam

sizes are just as hard to get as ever; no companies have any to spare, and consumers in Philadelphia have been trying to pick up pea coal in New York City, without success.

The general outlook for the coming season is good, though it is scarcely to be expected that this year's output will equal last year's. The collieries are holding production back, some running on less than ¾ time now, and the February output was under 3,200,000 tons compared with 4,355,000 tons for January. The falling off is partly because February is a short month and partly because it was a mild one.

The outlook for labor troubles is not considered threatening. The mines are earning more money than in 15 years, and the only grievance that the professional agitators have is that the Federation of Mine Workers is not "recognized" by the mine owners. This grievance is hardly great enough to make a serious strike. Free burning anthracite is quoted f. o. b. New York as follows: Broken, $3.30; egg, $3.45; stove, $4; nut, $4, while independent concerns are selling stove coal below $3.75.

Notes of the Week.

The Schuylkill Coal Exchange states that its drawn to return rate for coal sold in February was $2.64 a ton, and the rate of wages for the last half of February and first half of March is 5% above the $2.50 basis.

Bituminous.

The Atlantic seaboard bituminous trade shows a few changes. There is considerable coal on the market looking for a buyer, but it is all of the poorer grades and much of it of the poorest. The better grades are in demand, and some producers of such coal have been obliged to buy poorer grades to help out contractors.

Blockades on the main line roads have seriously hampered the movement of coal from mines to tidewater and greatly affected shipments. Several producers were unable to get coal to tidewater for a full week, but at this writing the situation has improved and some coal is coming through, having been shipped within the past two or three days. One producer states that he has coal coming to tidewater in driblets that was mined in January.

Consumers are beginning to show some anxiety about contracts for the coming season and are trying to close them. Producers, however, feel their advantage and are in no hurry to make terms. There is the usual talk from producers about the prices they will pay and how low coal will be, but this talk doesn't have much effect on producers, who point to the higher rail freights and increased mining costs.

Trade in the far East shows most demoralization from offerings of cheap coal, but there are no large legitimate offerings of the better grades. Along the Sound there is a great demand for coal on old contracts. New York Harbor trade if of good volume and all-rail trade is calling for a large amount. At the mines there is considerable uneasiness about possible labor troubles.

Transportation from mines to tide is erratic and very poor. Car supply the first of the week was nothing; now it is about ¾ the demand. In the coastwise vessel market vessels are in good supply and the demand is small. Freight rates from Philadelphia are $1.50 to Boston and $1.25 to Providence, New Bedford and the Sound.

It is difficult to give current prices, but the outlook favors a price of $2.50 per ton for best grades at Philadelphia and Chesapeake Bay ports.

Birmingham, Ala. March 5.
(From Our Special Correspondent.)

There have been no important changes in the coal market conditions in Alabama since last week. The demand is greater right now than can be attended to by the producers and the shipments are exceedingly heavy. The domestic, local and export trade is very lively and the railroads are handling much coal in and from the district. In fact, it is stated that the Louisville & Nashville Railroad is burning Kentucky coal in the Birmingham District, being unable to obtain Alabama coal.

The export trade is lively. The Tennessee Coal, Iron and Railroad Company began shipment on a 30,000-ton contract received from Mexico some days ago. This is the second order that has been received this year from that country, the other being for 7,800 tons. Blocton lump coal is going down to that country. An order for 3,000 tons of coal for Cuba has also been accepted in this district and shipment started. There is much coal going from this section to New Orleans by rail, down the Illinois Central, the Brilliant coal from Marion County. The shipments down the Mississippi River barge line continue regularly.

The committee of the miners in the employ of the Tennessee Coal, Iron and Railroad Company investigated the books of the company Saturday for the purpose of ascertaining the price of pig iron in order to set the price of coal mining. The maximum price in mining will continue, as it has for the last four or five months, there having been no change in the pig iron prices.

There are no labor troubles in the State at present among the miners except at one mine in Walker County. There are hardly 200 men interested in this trouble.

A good price is being obtained for the product and contracts offered do not vex the operators because of the prices, but because of time of delivery. Several handsome orders are said to have been refused recently in this district because it was impossible to fill them at the time mentioned.

Chicago. March 7.
(From Our Special Correspondent.)

Anthracite Coal.—Anthracite continues in medium demand, sales being for the time mostly for small quantities, one or two cars being about the average. Chicago and the West have been experiencing very wintry weather; had it not been for this, the trade would have been very dull. Prices are maintained seemingly on coals for domestic use, but there is said to be some cutting in larger sizes through lack of necessary space for storage purposes. The circular is egg and stove, $5.75, and $6 for chestnut.

Bituminous coal has quieted down somewhat, the demand having been lessened because of labor troubles. Buying, though good, is necessarily restricted to lots in size just enough for temporary use, and that will doubtless be the rule for a few weeks to come. There has been some buying before the expected higher prices come, on April 1st. These will send bituminous coal up from 25 to 40c. per ton. They are due to the increased mining wages to go into effect April 1st.

Cleveland, O. March 8.
(From Our Special Correspondent.)

The most important development of the week was the sale by Martin Mullen, the Cleveland coal operator and shipper of all his coal land in the Pittsburg District and his docks and tonnage on the great lakes to the Pittsburg Coal Company, the recently formed consolidation. Negotiations looking to the deal had been pending for over four months. When the formation of the coal trust first came up an option on the property of the Cuddy-Mullen Coal Company was secured. The figure named by Mr. Loftus Cuddy was accepted by the trust and he turned over his interest in the company to the Pittsburg Coal Company. When the trust officials refused to pay Mr. Mullen's price he held out and purchased a number of new properties. The two parties were about $50,000 apart, but a compromise was finally affected. It is understood that almost $500,000 is involved in the deal. When given his choice of selling out for cash or taking part payment in the stock of the new company, Mr. Mullen decided to take $200,000 worth of stock. The property transferred includes machinery for loading vessels at Cleveland, O., and Erie, Pa., fuel docks at Sandwich and Amherstburg in the Detroit River and in the St. Mary's River; and 3,000 acres of coal land in the Pittsburg District. Mr. Mullen had chartered lake vessels to carry 100,000 tons of coal to the head of Lake Superior and 50,000 tons to Portage and that tonnage also goes to the trust. Mr. Mullen still owns 2,400 acres of coal land in West Virginia, which he purchased since the Pittsburg Company was organized. With the withdrawal of Mr. Mullen, J. W. Ellsworth & Co. of this city remain the only firm of shippers from the Pittsburg District not in the trust.

The lake transportation situation, so far as coal is concerned, is virtually a deadlock. The chartering to the head of the lake ports on season contracts at 50c. per ton has been quite free, and several hundred thousand tons have been covered, but the business to Lake Michigan ports and particularly to Milwaukee is in an unsatisfactory condition. Some charters to Manitowoc and Sheboygan have been made at 60c. per ton, and the coal shippers are trying to secure boats for Milwaukee at the same figure. Thus far, however, they have been unsuccessful. The lowest rate named by any of the vesselmen is 70c. and quite a number refuse to tie up for less than 75c. per ton. A question that must early receive consideration is the price of fuel for lake steamers. Last year the price was $2.25 per ton. Vesselmen are willing to pay $2.50 per ton, but coal men seem inclined to demand $2.65 from dock and $2.75 from lighter.

Pittsburg, Pa. March 7.
(From Our Special Correspondent.)

Coal.—The coal situation remains unchanged. No increase in prices has yet been made, but retail dealers anticipating an advance have put up the price of slack 1c. a bu. A conference on what is known as the deadwork scale began to-day between committees representing the coal miners' organization and the operators in both combinations. This important part of the mining scale was not settled at the Inter-State joint conference, but was left to each district as the conditions in the various fields are different. The settlement of the deadwork scale will have an important bearing on prices after April 1st. About 3,000,000 bus. of coal were shipped to Southern ports this week.

Connellsville Coke.—The coke trade never was better, the production never as great and the present high prices are unusual. The heavy demand has had the effect of increasing prices, and this week furnace coke is quoted at $3.75@$4 and a higher price is obtained for prompt shipment. Foundry coke is selling at $4.25. The production is much greater than a week ago, and for the past week amounted to 219,221 tons, an increase of nearly 2,000 tons. A scarcity of labor in the region prevents a greater production and the shortage of cars considerably reduces shipments. The shipments last week aggregated 11,200 cars distributed as follows: To Pittsburg and river points, 3,234 cars; to points west of Pittsburg, 6,018 cars; to points east of Connellsville, 1,956 cars.

San Francisco. March 3.
(From Our Special Correspondent.)

The receipts of coal at San Francisco by water, exclusive of product of Mount Diablo mines and deliveries by rail from Rocky Mountain mines, for February and the two months ending February 28th, were, in short tons:

	February.	Year.
Eastern U. S.	..	2,387
Oregon	4 485	8,285
Washington	37 735	90 317
British Columbia	48,547	91,803
Australia	15,222	33 774
Great Britain	1,971	23.323
Totals	107,960	249,889

The receipts for the two months last year were 248,410 tons, showing an increase of 1,479 tons, or 0.6% this year.

SLATE TRADE REVIEW.

New York. Mar. 9.

The list of prices per square for No. 1 slate, standard brand f. o. b. at quarries in carload lots, is given below:

Prices of Roofing Slate.

Size, inches	Monson or Br'ville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.50	3.00	3.25	3.10	5.10	3.15		.....
24 x 12	6.60	3.50	3.00	3.25	3.10	5.25	3.15	3.75	.....
22 x 12	6.60	3.50	3.25	3.50	3 25	5.25	3.15	3.75	.....
22 x 11	6.50	3.75	3.25	3.50	3.25	5.25	3.15	4.00	.....
20 x 12	6 90	3.75	.....	3 50	3.25	5.25	3.15	3.75	.....
20 x 11	6.80	.....	.....	3.75	3.50	5.25	3.15	.....	.....
20 x 10	6.80	4.50	3.50	3.75	3.50	5.35	3.15	4.25	11.00
18 x 12	6.80	3.75	.....	3.50	3.25	5.25	3.15	3.50	.....
18 x 11	7.00	....	.....	.....	.....	...	3.15	3.75	.....
18 x 10	7.20	4.50	3.50	3.75	3.50	5.35	3.15	4.00	11.00
18 x 9	7.10	4.50	3.50	3.75	3.50	5.35	3 15	4 25	11.00
16 x 12	6.80	3.75	.....	3.50	3.50	.....	2.95	3.50	.....
16 x 10	7.10	4.25	3.50	3.75	3.50	5 25	2.95	4.00	11.00
16 x 9	7.00	4.25	.....	3.75	.....	5.35	2.95	4.25	11.00
16 x 8	7.20	4 50	3.50	3.75	3.10	5.35	2.95	4 25	11.00
14 x 10	6 60	3.75	3.25	3.25	.....	5 25	2.85	3.75	11.00
14 x 9	6.50	.....	.....	.....	.....	.....	2.85	3 75	11.00
14 x 8	6 60	3.75	3.25	3.25	3.10	5.10	2.85	4.25	11.00
14 x 7	6.40	3.75	3.25	3.25	3.10	5.10	2.60	4.25	11.00
12 x 10	5.80	....	.	....	.....	...	2.60	3.25	.....
12 x 9	5.60	.....	.....	.....	.....	.....	2.60	3.25	.....
12 x 8	5.50	3.50	.....	3.00	2.80	4 85	2.60	3.50	9.50
12 x 7	5.00	3.25	.....	3.00	2.80	4.85	2.50	3.50	9.50
12 x 6	4.80	3.25	.	3 00	2.80	4.75	2.50	3 50	9.50

A square of slate is 100 sq. ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16 in.

Though the demand is limited at this season, we hear of new quarries being opened, the latest in California. The production in that State will likely show an increase over 1899, when the total output was approximately 806 squares of roofing.

Prices are practically unchanged, though some dealers are said to be shading the schedule.

Export business is quiet. The shipments of roofing slate from the United States in January we estimate at 14,151 squares valued at $72,103, as against 13,968 squares valued at $71,216 last year. The foreign movement of mill stock, such as school slates, etc., was valued at $4,489, as against $7,913 in January, 1899.

IRON MARKET REVIEW.

NEW YORK, Mar. 9, 1900.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Mar. 10, 1899. F'ces.	Tons.	Week ending Mar. 9, 1900. F'ces.	Tons.	From Jan., '99. Tons.	From Jan., '00. Tons.
An' racite & Coke.	175	224,950	264	286,350	2,304,859	2,812,327
Charcoal.	16	4,625	29	7,175	52,642	76,822
Totals.	191	229,575	293	293.525	2,357,501	2,889,149

The furnace reports for March 1st show a drop in weekly capacity of the stacks in blast

of about 6,400 tons. This was not unexpected, and is the result of the banking of a few furnaces on account of short supplies of coke, and the stoppage of one or two others for necessary repairs. The production still continues on a very large scale. There has been a slight increase, about 36,000 tons, in unsold stocks at furnaces, but the total reported on March 1st was only 162,500 tons, or less than one week's production.

In raw material, Bessemer and foundry irons have been rather quiet, with no large transactions. It is understood that some 30,000 tons of basic pig have been placed by Alabama furnaces, the greater part of it to go to the West. Steel billets have been quiet, and there is talk of congestion in prices, but this has not yet materialized.

In finished material the principal transactions reported this week are from the West. It is understood that the Illinois Steel Company has taken contracts for 40,000 tons of rails, and for some 20,000 tons more of plates and bridge material. In the East comparatively little has been done, though some large contracts are on the market, including about 5,000 tons for the new Manhattan power house in New York, and some 4,500 tons for the new Government printing house in Washington. The Metropolitan Company in New York has announced a pretty expensive programme of changes to electric power on its street lines in New York, which will require a lot of iron between now and fall.

Talk of concession in prices continues, but much of it is evidently for effect. The numerous inquiries for export material will aid very much in maintaining quotations at or near their present range.

Notes of the Week.

Imports of iron ore into the United States in January were 89,715 long tons, against 26,221 tons in January, 1899; showing an increase of 63,494 tons, or 244.2%, this year.

Birmingham, Ala. March 5.

(From Our Special Correspondent.)

The pig iron market in Alabama continues in the same condition that has prevailed now for the past several weeks. The demand continues steady, though in small lots. The shipments of the product from the district are very heavy. The furnacemen still claim that they are not hustling for much business and that the iron they are making is finding a ready sale. The domestic market is in a good condition. The local market is good, while the export trade is improving. The rolling mills here and at Gate City are in full blast, using a large amount of iron. The mills at Bessemer, recently purchased by the Tennessee Coal, Iron and Railroad Company are now in blast, the puddling departments to go on this week. The railroads are furnishing the rolling mills all the cars they are asking for. The machine shops and foundries are busy.

Reports come from Talladega that the furnace there belonging to the North Alabama Iron, Coal and Railroad Company, the Eugene Zimmerman syndicate, is working well and is turning out between 150 and 175 tons of iron per day, while the furnace at Cartersville, Ga., belonging to the same company, and which is operated on half coke and half charcoal, is doing well. Mr. Gentry Hillman, the superintendent of Talladega Furnace, is a former Birmingham man and is most capable.

The Pawnee Land Company, which is headed by Mr. Hull, of Savannah, a director in the Central Railroad of Georgia, with other gentlemen, will probably develop their properties, consisting of 10,000 acres of land in Blount County, Ala., above here, containing not only good coal, but also ore and limestone. A visit was made to the property by Mr. Hull and others during the past week and Mr. Pace, an expert from Virginia, made technical investigations and will report.

The steel plant at Ensley continues to turn out steel, though only 3 of the 10 furnaces are going. The steel wire and rod mill is to go into operation within the next few days, the machinery being put into condition now. A steel foundry is being constructed at Ensley by the Tennessee Coal, Iron and Railroad Company.

There have been no changes in the quotations, which are as follows: No. 1 foundry, $18.50; No. 2 foundry, $17.50; No. 3 foundry, $16.50@$16.75; No. 4 foundry, $16@$16.50; gray forge, $16; No. 1 soft, $18.50; No. 2 soft, $17.50. There is quite a scarcity of No. 2 foundry and gray forge.

The Williamson furnace, located in the city, has been dried out and is ready to be placed in blast. There is no raw material on hand, and until a good supply can be secured the furnace will have to wait. Perry Bros., lessees, are anxious to put the furnace in blast just as soon as possible.

Buffalo. March 7.

(Special Report of Rogers, Brown & Co.)

There is more interest being shown by the larger consumers. Several have asked prices and show more inclination to buy. The recent snow blockade here, which stopped shipments for a few days, shows how close to the danger line many foundries are running, not keeping the stock they did when melting 50% less iron. With shipments urgently called for, with prices firming up and sales more numerous, we quote below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $24@$24.50; No. 2 strong foundry coke iron, Lake Superior ore, $23.50@$24; Ohio strong softener No. 1, $24.25@$24.75; Ohio strong softener No. 2, $23.25@$23.75; Jackson County silvery, 8%, $31; Southern soft No. 1, $23.50; Southern soft No. 2, $22.50; Lake Superior charcoal, $26@$27; coke malleable, $24.50@$25.

Chicago. March 7.

(From Our Special Correspondent.)

Pig Iron.—There is not much change in the market. The buying continues to be mostly for small lots, all asking quick delivery, the demand on iron for future delivery having been small. A few sales of 300 and 500 tons were made, and one as high as 1,000 tons by an agricultural implement house. Prices are as follows: Lake Superior charcoal, $25.50@$26; local coke foundry No. 1, $24.50@$25; foundry No. 2, $23.50@$24; foundry No. 3, $22.50@$23; local Scotch, No. 1, $25@$25.50; Ohio strong softeners No. 1, $24.50@$25; Southern silvery, according to silicon, $25.50@$27; Southern coke, No. 1, $22.85@$23.50; No. 2, $21.85@$22.50; No. 3, $20.85@$21.50; Southern No. 1 soft, $22.85@$23.35; No. 2 soft, $21.85@$22.85; malleable Bessemer, $25@$26; Alabama car wheel, $24.85@$25.75.

Cleveland, O. March 8.

(From Our Special Correspondent.)

Iron Ore.—The sales market is still waiting upon greater activity in pig iron buying with a prospect of some fairly heavy transactions when this finally comes. Interest in both iron ore and transportation circles now centers in the probable date of the opening of navigation and the condition in which the loading and unloading docks will be found when that time comes. That the former will contain more ore than at any time in years, now seems certain. At the unloading docks at Lake Erie ports a situation only a trifle less satisfactory may be anticipated. The severe weather encountered at almost all the ports on Lake Erie during the past week may make necessary a revision of some calculations. The movement of ore forward to furnaces has been seriously retarded. Considerable talk is being occasioned here by the manner in which the firm of Corrigan, McKinney & Co., of Cleveland, is branching out in the iron ore business. Within the past year they have leased a number of large tracts of mining land in the Lake Superior district and have added 18 boats to their fleet of vessels. Capt. Corrigan stated this week that the firm expects to ship at least 100,000 tons of ore from its new mine, the Stevenson, this year. Contracts for the stripping work will be let in the near future. Evidently the plans of the ore shippers depending on the new tonnage to come out this spring will need no revision, for the new craft are being launched in rapid succession now. One of the 500-ft. vessels building for the American Steel and Wire Company went into the water at Lorain, O., a week ago and later an immense steamer building for John D. Rockefeller was launched at the local yard of the American Shipbuilding Company. In this connection it may be noted that all of the leading iron and steel producing interests being in control of sufficient tonnage to cover the greater portion of their needs, little interest has been excited by the promulgation of a project for the formation of a trust to control the leading independent freight carrying vessels on the lakes. The few ore sales of the week were on the following basis: No. 1 Specular and magnetic, $6@$6.50; No. 1 Specular and magnetic, non-Bessemer, $5@$5.25; red hematite, Bessemer, $5.25@$5.50; red hematite non-Bessemer, $4 @$4.50. The last vessel charters to carry ore (for the season) were as follows: From the head of the lakes. $1.25; from Marquette, $1.10; from Escanaba, $1.

Pig Iron.—There has been an improvement in the pig iron situation, but, with the exception of Bessemer, it is nothing to brag about. The Bessemer market is strong at $24 in the Valley, and the sales made within the past two weeks cover probably half of the total output of the furnaces for the third quarter of the year. Buyers of foundry iron still hold off, somewhat to the mystification of sales agents who went on the supposition that they would be forced into the market long before this. The coke supply is still far from satisfactory, but there appears to be little hope for relief before the middle of the year. There has been less Southern iron coming into this section, doubtless due in some measure to the revival of the export trade. Current quotations are: Bessemer, $24; No. 1 foundry, $23; No. 2 foundry, $22.50; gray forge, $21.50; Lake Superior charcoal on Lake Erie docks, $25.50.

Scrap.—The old material market shows no more activity than it did a week ago, and there is not likely to be much change until there is a livening of the pig iron market. In such lines as transactions are reported, prices have undergone little alteration. We quote: No. 1 wrought, $22; No. 1 cast, $16.25; steel melting stock, $21; car wheels, $23.50; turnings, $13; borings, $11.50.

Philadelphia. March 8.

(From Our Special Correspondent.)

Pig Iron.—The inquiries for the past two days, so far as the local market is concerned, have been for forge iron to meet mill requirements on account of a large amount of business recently transacted with car builders. Several mill owners have endeavored to secure forge iron for the rest of the year, and to-day they said they expected to contract for all they wanted. While quotations are not exactly weaker, there is not the same strength as there was two weeks ago. Furnaces are all able to make prompt deliveries—that is, at 60 to 90 days. There is no accumulation, of course, and will not be for a long time. Quotations for No. 1 delivered are $24@$25; No. 2, $23@$23.50; forge iron, $19.75 @$20.50; basic, $22; Bessemer, $23; low phosphorus, $27.50.

Billets.—Offers have been made for large supplies of billets. Small sales have been made at $35. Offers are said to be at $34@$34.50. Agents of makers refuse to affirm or deny this statement.

Merchant Iron.—The attempt to hammer down common or refined iron has failed. The sole reason is that car-builders are ready to place large contracts, but only a few very big contracts have been closed, since the manufacturers do not like to sell common iron at 2c. The regular quotation is 2.10c.; refined, 2.20c.; test iron, 2.30c.; steel bars, 2.50@2.60c.

Sheet Iron.—A few large transactions in sheet iron have been closed since Monday. More business is on the way.

Pipes and Tubes.—Boiler tubes and casing at the new quotations will meet with a good demand. The local market is rather quiet just at present.

Plate Iron.—The effort of manufacturers to keep a big lot of business ahead has resulted in a shaving of prices which is likely to continue. Some plate iron people say the big demand they see ahead will bring prices higher, but a fair opinion of the market is, that prices for iron and steel plate are likely to go lower. Steel plate ¼in. is 2.10c. Business was done this week in shell at 2.20c.@2.30c.; flange, 2.50c. Several lots of charcoal iron plates have been sold.

Structural Material.—There is big business in sight, but not much actual placing of orders. Constructing engineers are busily figuring out their requirements for office building. Both the Pennsylvania and Reading roads will want a good deal of material during the course of the summer. The usual quotations continue at 2.40 @2.60c.

Steel Rails.—Steel rails were quoted at $35, with no particular business.

Old Iron Rails.—Old iron rails are worth somewhere from $26 to $27.

Scrap.—There is a great call for heavy steel scrap and railroad scrap. Some railroad scrap brought $24; heavy steel, $19 to $20.

Pittsburg. March 7.

(From Our Special Correspondent.)

The general condition of the iron and steel trade is good, but in some lines prices are a trifle easier. The demand for Bessemer pig iron is better than last week and prices are firm. There is no indication that a lower rate than $24 at the Valley furnaces will rule during the first half, and it is not at all improbable that a higher price will prevail. One of the features of the pig iron market this week is the curtailment of production due to a strike at the New Castle furnaces. Three of the furnaces of the National Steel Company and one of the Atlantic Iron and Steel Company have been banked as a result of a strike of the men for an advance in wages amounting to 25c. a day. The furnaces have been idle all week, and there does not seem to be any immediate prospect of an adjustment of the difference. The idle furnaces have a daily output of 1,200 tons of Bessemer pig iron. Over 100,000 tons of pig iron were sold during the month of February and there does not seem to be enough in sight to supply the demand for the first half of the year. It is possible, however, that some of the iron was bought for speculation, but this is not considered likely. Foundry iron is also sold up to the limit, and there may be a shortage before July 1st. The Bessemer steel billet market is unusually quiet and no sales were recorded during the week. It is reported on good authority that one sale of billets, aggregating 75,000 tons, was made about two weeks ago, but for some reason was not made public. It was for a Western interest and was divided among several Pittsburg concerns. The price is not given, but it is believed to have been much lower than the quoted price of $35. The market for finished material is slow, except in structural iron and steel and for sheets.

Pig Iron.—Sales aggregating 15,000 tons were made during the week at $24, Valley furnaces,

and a few small lots were sold in Pittsburg at $25. No sales have been made for delivery beyond July 1st. The demand for foundry iron is also heavy, and prices are firm. No. 2 is still quoted at $23@$23.25, and gray forge at $21 delivered in Pittsburg.

Steel.—The market for Bessemer steel billets is unusually quiet. There were no inquiries this week, and $35 is still quoted, but it is believed that a much lower rate could be had for a desirable order. Steel plates are lower than last week. Tank plate is quoted at 2.05c., a drop of about $3 a ton within a week.

Sheets.—The sheet market is improving daily and the demand is better than a week ago. There is no material change in prices. Although the minimum price for Nos. 27 and 28 gauge is 3.10c., no sales were made this week at less than 3.20c. A further advance in prices is confidently expected.

Ferro-manganese.—There is no change in the market, and domestic 80% is still quoted at $125 a ton.

New York. Mar. 9.

The local market shows a slightly better tone in some lines, but is generally not active. In foreign trade we note shipments to Japan of $20,000 worth of steel rails and $14,000 worth of wire nails; good shipments of iron pipe to Germany and Great Britain and continued orders for machine tools from France and Germany.

Pig Iron.—There is no great amount of buying yet. We quote for delivery to July, Northern brands, tidewater delivery: No. 1 X foundry, $24@$24.75; No. 2, $22.50@$23.25; No. 2 plain, $21.75 @$22.25; Southern brands, New York delivery: No. 1 foundry, $22.50@$23; No. 2 foundry, $21.50@ $22; No. 1 soft, $21.50@$23.25; No. 2 soft, $21.50@ $22; No. 3 foundry, $21.25.

Warrant Iron shows few fluctuations and limited dealings. No. 2 Alabama foundry, $16.50; No. 3, $15.25; No. 4, $15; gray forge, $15.

Bar Iron and Steel.—Traed is fair. We quote refined iron at 2.30c. on dock, and common up to 2.15c. Soft steel bars, 2.45c.

Plates.—The market is weaker. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 2.30c.; tank, 3/16-in., 2.40c.; shell, 2.50c.; flange, 2.60c.; marine, 2.80c.; firebox, 2.80c.; universals, 2.40c.

Structural Material.—The aggregate volume of material called for is satisfactory. We quote in large lots at tidewater: Beams, 2.45c.; channels, 2.45c.

Steel Rails and Rail Fastenings.—Transactions are few. We quote for standard sections $35 f. o. b. Eastern mills. Smaller rails are quoted: 12-lb., $39; 16-lb., $39; 20-lb., $39; 30-lb. to 40-lb., $37; 40-lb. to standard, $36, with the usual advance for small orders. We quote angle bars, 2.35c.; fish plates, 2.30c.; spikes, 2.70c.

METAL MARKET.

NEW YORK, March 9, 1900.

Gold and Silver.

Gold and Silver Exports and Imports

At all United States ports in January and year.

Metal.	January.		Year.	
	1899.	1900.	1899.	1900.
GOLD.				
Exports	$1,755 451	$5,691,290	$1,755,451	$5,691,290
Imports	6,392,344	1,988,272	6,392,344	1,988,272
Excess	I. $4,636,893	E. $3,703,018	I. $4,636,893	I. $3,703,018
SILVER.				
Exports	5,380 806	4 599,199	5,380,806	4,599,199
Imports	3,128,852	2,130,335	3,128,852	2,130,335
Excess	E. $2,251,954	E. $2,468,864	E. $2,251,954	E. $2,468,864

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending March 8th, 1900, and for years from January 1st, 1900, 1899, 1898, 1897.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$244,448	$50,014	$1,031,039	$181,701	E. $1,043,772
1900..	2,373,136	989,289	7,535.179	803,832	E. 8,115,194
1899..	866,969	4,008,922	5,792,145	575 144	E. 2,075,048
1898..	3,539,136	7,686,780	8,012,650	535,505	E. 3,320,501
1897..	902,361	852,735	7,795,977	408,952	E. 7,436,751

Exports of gold were chiefly to the West Indies; imports were in small parcels, from various ports. Exports of silver went chiefly to London; imports were from Mexico and South America.

The United States Assay Office in New York reports the total receipts of silver at 100,000 oz. for the week. Total since January 1st, 1,132,000 oz.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .47¾	$ 49
Peruvian soles and Chilean pesos	.44	.46
Victoria sovereigns	4.86	4.88
Twenty francs	3.86	4.88
Twenty marks	4.75	4.88
Spanish 25 pesetas	4.78	4.82

Average Prices of Silver per oz. Troy.

Month	1900.		1899.		1898.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January	27.30	59.30	27.42	59.36	26.29	56.77
February	27.49	59.76	27.44	59.42	25.89	55 07
March	.....	.....	27.48	59.64	25.47	54.90
April	.....	.....	27 65	60.10	25.95	56.02
May	.....	.....	28.15	61.23	26.31	56.98
June	.....	.....	27 77	60.43	27.04	58.61
July	.....	.....	27 71	60 26	27.32	59.06
August	.....	.....	27.62	60.00	27.48	59.54
September	.....	.....	27.15	58 89	28.05	60.68
October	.....	.....	26.70	57.98	27.90	60.42
November	.....	.....	27 02	58.67	27.93	60 60
December	.....	.....	27.21	58.99	27.45	59.42
Year	.....	.....	27.44	59.58	26.76	58.26

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1900.	1899.	1900.	1899	1900.	1899.	1900.	1899
Jan	16.33	14.75	27.07	22.48	4.68	4.18	4 65	5.34
Feb	16.08	18 00	30.58	24 20	4.675	4.49	4.64	6.28
March	.....	17.54	.....	23.32	.....	4.37	.....	6.31
April	.....	18.43	.....	24.98	.....	4.31	.....	6.67
May	.....	18.25	.....	25.76	.....	4.44	.....	6.88
June	.....	17.93	.....	25 85	.....	4.43	.....	5.98
July	.....	18.33	.....	29.63	.....	4.52	.....	5.82
August	.....	18.50	.....	31.53	.....	4.57	.....	5.65
Sept	.....	18 46	.....	32 74	.....	4.58	.....	5.50
October	.....	17.76	.....	31.99	.....	4.575	.....	5.32
Nov	.....	16.93	.....	28.51	.....	4.575	.....	4.64
Dec	.....	16.40	.....	25.88	.....	4.64	.....	4.66
Year	.....	17.61		25.12	.....	4.47	.....	5.75

The price given in the table is for Lake Copper; for electrolytic copper the average for January, 1900, was 15.58c.; for February, 15.78c.

Financial Notes of the Week.

No notable changes in general trade are to be reported for the week. Business continues active, and the only drawbacks reported are the labor troubles centering in Chicago. The drop in sterling exchange has reached a point which would be likely to induce gold imports, though they may be postponed by the demand for money and the higher rates of interest in London.

The silver market continues firm and closes strong with an upward tendency at 27 9/16d. on London mint orders.

The amount of money in the United States on March 1st is estimated by the Treasury Department as below:

	Totals.	In Treas.	In circulation.
Gold coin (inc. bull'n in Treas.	$1,025,825,162	$232,225,336	$612,333,489
Gold certifi	.....	.....	181,266,337
Silver dollars	478,305,308	9,061,827	69,139,994
Silver certifi	.....	.....	400,103,487
Subsid. silver	80,101,151	5,308,841	74,792,310
Treas. notes, 1890	87,198,000	1,252,773	85,945,227
U. S. notes	346,681,016	13,069,650	318,341,366
Currency certifi	.....	.....	15,270,000
Nat. bank notes	249,516,228	3,776,647	245,739,581
Total	$2,267,626,865	$264,695,074	$2,002,931,791

For redemption of outstanding certificates an exact equivalent in amount of the appropriate kinds of money is held in the Treasury, and is not included in the account of money held as assets of the Government. The estimated circulation per capita on March 1st was $25.93. The total amount in circulation on March 1st showed a decrease of $217,564 from that reported on February 1st; but an increase of $74,089,179 over March 1st, 1899.

The corrected figures of the Treasury transactions for Februray showed total receipts, including nearly $3,000,000 in the settlement of the Central Pacific indebtedness, of $45,631,265, and expenditures of $37,738,472, leaving a surplus for the month of $7,892,793.

Imports of specie at San Francisco by water in January were:

	Gold.	Silver.	Totals.
Coin	$3,312	$55,571	$58,883
Bullion	22,316	230,233	252,549
Totals	$25,628	$285,804	$311,432

In January, 1899, the total was $3,243,723, and included a large amount of gold from Australia. The receipts this year were: From British Columbia, $11,896; Central America, $5,154; Mexico, $294,382.

Imports and Exports of Metals.

Port.	Week, Mar. 7.		Year 1900.	
	Expts.	Impts.	Expts.	Impts.
***New York.**				
Aluminum, long tons	3	‡7	5	19
Antimony ore				403
" regulus		‡12		109
Chrome ore		‡81		81
Copper, fine	1,824	400	17,840	3,794
" matte			281	
" ore		200		640
" ash				15
Ferro-Chrome				10
Ferro-mangan'se				90
Iron ore				5,100
" pig, bar, rod		‡165	1,211	1,166
" pipe	624		2,364	124
" plates, sheets			284	
Lead	800	1,956	19,058	10,856
" ore				2,100
" dross			24	
Manganese, ore				1,961
Metals, old, scrap	13	‡134	400	1,774
Composition			794	
Nails	1,221		5,907	
Nickel	105	‡10	302	40
" ore, matte				2,821
§Railr'd material		‡115	435	718
Rails, old		‡141		357
Spiegeleisen				45
Steel bars, plates		‡611	900	3 918
" rails	876		7,151	18
" wire	318		2,272	
" not speci'd	130	‡36	1,338	643
Tin		810		4,808
" dross or ashes			3	
" and black plates		‡298		6,125
Zinc		25		31
" dross	10		142	50
" ashes, skim			236	10
" ore			3,531	
†Baltimore.				
Antimony regulus...casks				2,930
Chrome ore, long tons				
Copper, fine	1,285	332	9 523	1,733
" matte				
" pipe				
Ferro-manganese				
Ferro-silicon				
Iron pig, bar, etc.		500		6,490
" ore		6,500		118,930
" pyrites		2,760		5,780
Manganese ore				38,490
Metals, old & Rails			251	
Nails	14		541	
Pipe, iron & steel	591		1,684	
Spiegeleisen				
Steel, bars, pl'es	668		1,905	103
" wire		11	284	25
" rails	2,201		16,966	
not specified				
Tin		1		67
" and black plates		24		556
" other				
Zinc				
" dross, skim				
" oxide				
***Philadelphia.**				
Antimony, long tons				
Chrome ore				
Copper, fine			562	
" ore				6,872
" old				
Ferro-manganese				
Ferro-silicon				
Iron, pig				2,124
" ore		‡6,800		61,680
" pyrites				
Manganese ore				11,900
Steel sheets				
Spiegeleisen				3,500
Tin		25		90
" and black plates				1,018
Zinc dust				

Total United States.§§

Articles.	Jan., 1900.		Year, 1899.	
	Expts.	Impts.	Expts.	Impts.
Antimony, long tons		86	8	1,411
" ore		342		1,778
Copper fine	12,889	4,313	111 572	31,904
" ore & matte	375	2,122	5,219	31,637
Iron, pig & bar	9,905	6,877	239,891	60,163
" ore		89,715	40,660	674,098
Iron & steel plates	1,988	1,171	56,981	7,044
Iron & steel rails	16,206	287	177,714	2,134
" " wire	6,292	137	116,332	2,363
Lead, pigs, bars & old	30	11	54	215
Lead in ore, etc.	4,727	4,291	66,720	84,442
Manganese ore and oxide		35,256	25	188,349
Nickel ore & matte	131		2,234	
Nails, cut	835		9,974	
" wire	4 195		33,535	
Quicksilver	28		564	
Steel, billets, rods, etc	4,091	4,592	73,374	30,565
Tin		2,971		31,807
" & black plates	16	6,389	302	58 916
Zinc	1,096	224	6,046	1,331
" ore	2,259		25,197	

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending Mar. 2d. §§ Monthly returns, Treasury Department.

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb in pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

The statement of the United States Treasury on Wednesday, March 7th, shows balances in excess of outstanding certificates as below, comparison being made with the statements of the corresponding day last week:

	Feb. 28.	Mar. 7.	Changes.
Gold	$232,049,708	$237,128,880	I. $5,079,172
Silver	9,123 733	3,512 830	D. 610,903
Legal tenders	15,138,619	12,959,406	D. 179,213
Treas notes, etc.	1,267,296	812,719	D. 454,567
Totals	$255,579,346	$259,413,835	I. $3,834,489

Treasury deposits with national banks amounted to $111,645,152, a decrease of $105,979 during the week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending March 3d, gives the following totals, comparison being made with the corresponding weeks in 1899 and 1898:

	1898.	1899.	1900.
Loans and discounts	$528,256,400	$780,607,700	$755,076,100
Deposits	706,020,400	914,810,300	829,917,000
Circulation	13,774,900	14,495 200	18,574,300
Reserve:			
Specie	120,125,900	138,407,100	158,177,900
Legal tenders	77,202,700	54,873,600	62,942,900
Total reserve	$197,328,600	$253,280,700	$221,120,800
Legal requirements	176,505,100	228,702,575	207,479,250
Balance, surplus	$20,823,500	$24,578,125	$13,641,550

Changes for the week, this year, were increases of $9,621,000 in loans and discounts, $3,050,400 in deposits, and $602,800 in circulation; decreases of $4,507,000 in specie, $767,400 in legal tenders, and $6,037,000 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars and comparison is made with the holdings at the corresponding date last year:

	1899.		1900.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd.	$197,407,100	.....	$158,177,900	.....
England	165,713,385	.....	179,860,255	.....
France	364,554,605	$239,506,355	383,961,040	$228,351,925
Germany	146,275,000	75,355,000	143,730,000	74,045,000
Spain	56,010,000	48,230,000	68,080,000	74,890,000
Aus.-Hun	149 160 000	52,060,000	159,180,000	45,615,000
Neth'l'ds	21,565,000	34,295,000	24,270,000	30,185,000
Belgium	15,735.000	7,870,000	14,625,000	7,310,000
Italy	78,365,000	11,920,000	77,135,000	7,965.000
Russia	497,105,000	22,300,000	412,755,000	30,745,000

The returns of the Associated Banks of New York are of date March 1st, and the others are of date of February 28th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the year up to February 22d, 1900, are reported by Messrs. Pixley & Abell's circular as follows:

	1899.	1900.	Changes
India	£561,500	£789,727	I. £228 227
China	230,380	71,200	D. 159,180
The traits	5,000	3,300	D. 1,700
Totals	£796,880	£864,227	I. £67,347

Arrivals for the week, this year, were £190,000 in bar silver from New York, £47,000 from Australia, and £4,000 from the West Indies; total, £241,000. Shipments were £245,000 in bar silver to India.

Indian exchange has been easier on account of the shipments of gold to India, the arrivals of gold in Bombay for the week being equivalent to 60 lakhs of rupees. The Council bills offered in London were, however, all taken at an average of 16.06d. per rupee. There was no demand for silver.

The coinage executed at the mints of the United States in February and the two months of this year is reported by the Bureau of the Mint as below:

	Febuary		Jan.-Feb.	
Denominations.	Pieces.	Value.	Pieces.	Value.
Double eagles	670,095	$13,401,900	1,048,675	$20,973,500
Eagles	.....	.....	374,840	3,748,400
Half eagles	.....	.....	39,000	195,000
Total gold	670,095	$13,401,900	1,462,515	$24,916,900
Dollars	1,940,000	1,940,000	3,490,000	3,490,000
Half dollars	.....	.....	660,000	330.161
Quarter dollars	.....	.....	1,312,000	328,000
Dimes	.....	.....	1,560,000	156,000
Totol silver	1,940,000	$1,940,000	7,022,320	$4,3'4,161
Five c. nickels	1,343,000	67,150	3,554,000	177,700
One c. bronze	5,965,000	59,650	12,337 000	123 370
Total minor	7,308 000	$126 800	15,891,000	$301.070
Total coinage	9,918,095	$15,468,700	24,375,835	$29,522,131

As compared with January, the total coinage in February shows an increase of $1,415,269, all in gold coin.

Other Metals.

Daily Prices of Metals in New York.

March.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. P'nce	Copper. Lake cts. ₩ lb.	Copper. Electrolytic. ₩ lb.	Copper. Lond'n standard £ ₩ ton.	Tin, cts ₩ lb.	Lead cts. ₩ lb.	Spelter, cts. ₩ lb.
3	4.86¼	59⅝	27½	16¼	15⅛	.....	34	4.67½	4.65
5	4.83	59⅛	27⅞	16¼	15⅛	77 0 0	35	4.67½	4.62½
6	4.86	59⅝	27⅛	16¼	16	79 10 0	35¼	4.67½	4.65
7	4.85¾	59⅝	27½	16⅜	16	78 0 0	34¼	4.67½	4.65
8	4.85¾	59⅜	27½	16⅜	16¼	78 10 0	34½	4.67½	4.65
9	4.86⅛	59⅞	27¾	16⅜	16⅛	78 10 0	34⅝	4.67½	4 65

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The better tone which has been in evidence of late still prevails. Values have improved a little and with the more active demand which now seems likely to turn up in the near future, prices are apt to advance still further. There is very little copper unsold for this and next month. Europe has been, and is still, drawing heavily upon our supplies. Exports last month, although a short one, were exceptionally heavy and the indications are that not only will they continue on that scale, but will assume still greater proportions. We quote Lake 16¼@16⅜c.; electrolytic copper in cakes, wirebars or ingots at 16@16¼c.; in cathodes at 15⅞@16⅛c.

The scope of the fluctuations in London was much larger, and standard copper, which closed last week at £75 5s., advanced gradually to £79 10s., from which it declined to £78, advancing again to £78 10s., and closing to-day at £78 10s. for spot and £75 5s. for three months.

The backwardation, it will be noticed, is now £3 5s., but earlier in the week, when the spot price was £79 10s., it amounted to as much as £4 15s. Aside from this the conditions of the foreign market appear very healthy. Refined and manufactured sorts we quote: English tough, £78@£78 10s.; best selected, £79@£79 10s.; strong sheets, £86; Indian sheets, £83; yellow metal, 7d.

Tin.—The movement of this article during the present week have been quite as erratic as they have been from time to time during the last few months, spot tin selling at one time as high as 35@35½c., from which there was a decline to 34c. The closing price to-day is 34¾c. for spot, while delivery next month is quoted nominally at 32@33c. Demand continues to be confined almost absolutely to spot delivery.

The London market opened on Monday at £150 15s., this being an advance of £4 over the closing price of the previous Friday, advancing the following day to £153, but a decline set in which carried prices down to £149. However, values again improved, advancing to £150 for spot, and closing to-day at £151 15s. for spot, £143 for six months.

Lead remains dull and neglected at 4.65@4.70c. New York, 4.55c. St. Louis.

The foreign market is considerably firmer, Spanish lead being quoted at £16 15s., English lead at £16 17s. 6d.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead continues uninteresting. There is no change in the price of soft Missouri and chemical lead; both are selling in a retail way at 4.60c., and desilverized at 4.65c.

Spelter.—There is at last a somewhat better demand, but prices do not show any change, the quotations in New York remaining at 4.62½@4.65c., and in St. Louis 4.50@4.55c.

The foreign market was very firm at the beginning of the week, when the price advanced to £22 5s., but the improvement has not been fully maintained. To-day £22 1s. 3d. is quoted for good ordinaires, £22 6s. 3d. for special.

Antimony.—We quote 10½@11c. for Cookson's, 9¾@9⅞c. for Hallett's, 9½@9⅝c. for U. S. Star.

Nickel continues firm and demand very brisk. Quotations are firm at 40 and 45c., according to size of order.

Platinum.—Demand is good, and prices are firmer. In large lots we quote $17.75, and for smaller quantities, $18 per oz., in New York.

For chemical ware (crucibles and dishes), best hammered metal, we quote as follows: In lots of 250 grams or more, 67½c. per gram, and for smaller quantities, 70c. per gram; unmanufactured platinum will be supplied in same quantities at 2c. less per gram.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum.	Per lb.		Per lb
No. 1, 99% ingots	33@37c.	Bismuth	$1.70
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	42c up	Phosphorus	40@50c.
Alum.-bronze	20@23c.	Tungsten	70c.
Nickel-alum	33@39c.	Ferro-tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

Quicksilver.—Quotations remain unchanged at $51 per flask for large lots, New York. For small orders the prices are $52.50@$54. The London price continues at £9 12s. 6d., with the same figure named from second hands.

San Francisco quotations are $51.50@$52 per flask for local deliveries, and $46.50@$47 for export.

LATE NEWS.

The statement of the Queensland Mines Department for January gives the total production of gold in the colony in January at 59,861 oz. crude; of which 59,268 oz. came from the quartz mines, and only 593 oz. from placer workings. In January, 1899, the total was 54,684 oz., showing an increase of 5,177 oz., or 9.5%, this year.

A dispatch from Collingwood, Ont., March 9th, says: "The town has just concluded arrangements with the Cramps, shipbuilders, of Philadelphia, by which they agree to establish at this point blast furnaces and steel works. The capacity of the plant will be 200 tons per day. They agree, for certain concessions given them by the town, to establish a plant costing not less than $1,500,000, and to employ not less than 600 men continuously for 30 years."

A dispatch from Clinton, Md., March 8th, says: "By an explosion of dust at the Torrey Mines last evening, 3 miners were probably fatally burned and 9 seriously injured. There were 80 men in the mine at the time of the explosion, and the cool-headedness of W. F. Brown, pit boss, averted greater fatality. He cautioned the men to keep their faces close to the ground until assistance could reach them, and then directed the work of rescue until the last injured man was hoisted to the surface, a distance of 212 ft."

Advance statement of the American Iron & Steel Association gives the production of Bessemer steel ingots—including direct castings—as follows, in long tons:

	1898.	1899.
Pennsylvania	3,402,254	3,968,779
Ohio	1,489,115	1,679,237
Illinois	1,105,040	1,211,246
Other States	612,608	727,092
Totals	6,609,017	7,586,354

The increase shown was 977,337 tons, or 14.8%. There was no Clapp-Griffiths works in operation in 1899, and only one Robert-Bessemer plant was active. Four Tropenas plants were at work in that year, and all were employed in the production of steel castings. Production of all kinds of Bessemer steel rails direct from ingots by the producers of Bessemer steel ingots in 1899 was 2,240,767 gross tons, against a similar production in 1898 of 1,955,427 tons and 1,614,399 tons in 1897.

Cripple Creek, Colorado.

(From Our Special Correspondent.)

Altamont Gold Mining Company.—It is reported that the Deadwood group of claims has been consolidated with this company. The company owns a number of claims on Tenderfoot Hill, not very far from the Hoosier Mine. The Deadwood group also consists of a number of claims in this vicinity. The Altamont Company was controlled by W. A. Otis & Company, and the Deadwood group was owned by Messrs. Reed & Hamlin.

Gold Sovereign.—The annual meeting of the stockholders of this company was held this week in Cripple Creek, and the following directors elected for the ensuing year: A. E. Carlton, A. Rapp, W. A. Otis, A. P. Mackey, E. M. Sharp, E. C. Newcome and W. F. Rock. Mr. Carlton was elected president and treasurer, Mr. Mackey vice-president, Mr. Rock secretary, and Mr. Sharp general manager.

Independence Town and Mining Company.—It is announced that Judge Bailey will to-morrow deliver his decision in the case between this company and the Wilson Creek Consolidated Mining Company, which was tried before him some time ago. This decision is very important, and will mean much for the company in whose favor it is decided. The case will probably be appealed whichever way it is decided.

Nugget Mining and Milling Company.—The restraining order which this company had procured against the Doctor people, stopping them from taking out ore from the disputed territory, was this week dissolved by Judge Hallet in the U. S. Court in Denver this week. This restraining order was granted a short time ago by Judge Riner in Cheyenne. In dissolving the restraining order, Judge Hallet ruled that he had no jurisdiction in the case and ordered it returned to Teller County, where a preliminary hearing for permanent injunction against the Doctor people will be heard before Judge Stimson on the 6th of this month. It is understood that a large force of men are at work in the Doctor taking out all the ore before the hearing. Some of the ore in the disputed vein is very rich. The Nugget people are also not idle, a number of men being engaged in trying to prove up the apex of the vein.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 320.)

New York. March 9.

The imports and exports of chemicals at all United States ports in January were as below, comparison being made with the same month last year:

Articles.	Jan., 1899.		Jan., 1900.	
	Imports.	Exports.	Imports.	Exports.
Bleaching Powder, lbs.	8,724,462	....	10,774,877	....
Caustic Soda, lbs.	1,288,594	84,873	1,036,604	113,565
Sal Soda, lbs	142,033	.....	545,206	.....
Soda Ash, lbs.	2,198,996	1,012,044	12,369,969	.....
Chlorate of Potash, lbs.	139,663	4,479	84,373	3,920
Copper Sulphate, lbs.	....	3,029,417	.....	4,258,521
Nitrate of Soda, tons.	6,466	.....	7,836	300
Muriate of Potash, lbs	14,376,969	.....	11,298,565	.....
Phosphate Rock, tons.	20,791	54,216	15,255	44,013
Pyrites, "	24,872	.....	24,560	.....
Brimstone "	8,975	....	13,315	4
Saltpeter, lbs.	7,034,454	..	1,788,814	.....

The largest increases in imports are noted in bleaching powder, soda ash, and brimstone, while in exports the leading articles were copper sulphate and caustic soda.

Heavy Chemicals.—Further sales of domestic high test alkali and caustic soda for 1901 delivery are noted at 80@85c. and $1.80@$1.85 per 100 lbs., respectively, f. o. b. works. Foreign alkali to arrive is worth 87½c. per 100 lbs., while spot is quoted as below. The United Alkali Company, Limited, has declared a 7% dividend on its preferred shares; nothing on the ordinary capital. Large works, it is said, are to be erected at Wyandotte, Mich., by the Pennsylvania Salt Manufacturing Company. Sal soda is in better request. Bleaching powder, prime Liverpool, is scarce on spot, but a small lot was recently sold at $2.50 per 100 lbs. Continental bleach is selling at lower prices. Chlorate of potash is steady. We quote per 100 lbs., as below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York	In New York.
Alkali, 58%.	85@90	95@1.10	$.92½@95
" 48%.	90@95	1.00@1.15	1.02½@1.07½
Caustic Soda, high test	$2.12½@2.25	$2.37½@2.50	$2.50@2.60
powd., 60%	... .	2.75@2.87½	.....
70@74%.	....	3.00@3.25	.....
98%.	....	3 67½@4.00	3.75@4.00
Sal Soda	70@80.	....	67½@72½
"conc.	1.15@1.75	....	1.60@1.65
Bicarb Soda.	1.25@1.37½	.....	1.75@2.00
" " extra	3.25@3.50	....	....
Bleach. Pdr., Eng. prime.	.....	....	2.50@2 75
other br'nds.	....	....	2.12½@2.50
Chl. Pot cryst	....	9.50@9.75	10.00@10.50
" powd.	....	9.75@10 00	10.25@11.00

Acids.—The closing of one of the "outside" oxalic works in Germany has strengthened prices ¼c. per lb. in this market. Acetic acid is meeting a fair contract demand, while muriatic is featureless. Nitric is in better request and firmer, owing to the stronger market for nitrate of soda. Sulphuric is quiet, after experiencing such a continued good demand in February, when the deliveries exceeded those in January. Blue vitriol made larger sales for export.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No 8 in lbs.	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol,	4.50@5.00	Nitric, 38°	4.12½
Aqua Fortis, 38°	3 62½	Nitric, 40°	4.37½
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	6.00@6.25
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°	1.20	Sulphuric, 60°	1.05
Muriatic, 20°	1.35	" bulk 50° ton	14.00
Muriatic, 22°	1.50	Sulphurous, 100% SO_2 anhydrous.	8.00@10.00

Brimstone.—Arrivals of 3,200 tons are noted at this port this week. Spot best unmixed seconds brought $21.75@$22 per ton, and shipments are quoted $21.25@$21.50. Best thirds can be had at $18.75@$19 per ton.

Pyrites.—Imports of 2,711 metric tons Spanish iron pyrites are reported this week. Contract deliveries absorb most attention, and occasionally some close competition among the American pyrites is noted. However, prices remain unchanged as follows: Mineral City, Va., lump ores, $4.50 per long ton (basis 42%), and fines, $4.20; Charlemont, Mass., lump $5.50, and fines, $4.75; Pilley's Island, lump, nominally, $6.50, and fines, $4.50 per long ton, delivered in New York. Spanish pyrites, 13@15c. per unit, according to percentage of sulphur contents, delivered exship New York and other Atlantic ports. Spanish pyrites contain from 46% to 51% of sulphur; American, 42% to 44%, and Pilley's Island, N. F., 50%.

Fertilizing Chemicals.—Potash salts contracts are larger than last year, and on March 1st the agents of the German Kali Works made the customary advances in their prices. We now quote muriate of potash, 80@85%, basis of 80%, $1.83@$1.86½ per 100 lbs.; sulphate of potash, 90 @98%, $2.05½@$2.08½ per 100 lbs.; double manure salt, 48@53%, $1.06@$1.08½ per 100 lbs.; kainit (25% sulphate of potash), $9.05@$9.55 per long ton; sylvinit, 35@37% potash, 38½@41½c. per unit. These quotations are on the basis of foreign invoice weights, tares and analysis in quantities of not less than 500 tons bulk salts, or 50 tons concentrated salts. The ammoniates are in limited demand owing to ruling high prices. Sulphate of ammonia, gas, foreign, is held at $3.10 @$3.15 per 100 lbs., while the domestic has been quoted at $3 f. o. b. Boston.

Nitrate of Soda.—Prices are firm at $1.95 per 100 lbs., for spot, and $1.70 up for future shipments, according to position.

Messrs. Mortimer & Wisner's monthly statement of nitrate of soda, dated New York, March 1st, is as below:

	1900.	1899.	1898.
	Bags	Bags.	Bags.
Imp. into Atlantic ports from West Coast S. A., from Jan. 1 to date.	159,584	69,598	163,764
Imp. from Jan. 1 from Europe	.....	.....	.....
	159,584	69,598	163,764
Stock in store and afloat Mar. 1, 1900. in New York	30,838	29,028	11,863
Boston.	... ...	.....	.....
Philadelphia	....	.....	18,000
Baltimore	.....	2,500	2,500
Norfolk, Va.	.....	.....	.....
Charleston	.....	.....	.....
To arrive, due June 15, 1900.	333,800	256,0 0	251,000
Vis. supply to June 15, 1900	364,638	287,528	283,363
Stock on hand Jan. 1, 1900.	9,585	58,406	15,383
Deliveries past month.	99,665	20,332	87,437
Deliveries since Jan. 1 to date	138,332	98,476	116,734
Total yearly deliveries	.....	975,592	967,525
Prices current, Mar. 1, 1900	$1.95	$1 67½	$1.70

Phosphates.—Demand from new consumers is limited, while contract deliveries are fair. The shipments of high grade Florida rock through Savannah in February amounted to 10,880 tons, of which 4,182 tons went to Germany, 1,243 tons to England, 3,802 tons to Holland, and 1,643 tons to Fiume, Hungary. As compared with January, the total shipments show an increase of 2,372 tons, and they also show an increase of 4,112 tons over February, 1899. The coastwise shipments of phosphate rock from Charleston, S. C., from September 1st to March 1st, aggregated over 30,000 tons. A few weeks ago the International Phosphate Company of Mt. Pleasant, Tenn., shipped 1,000 tons of rock to Japan. We give the distribution of the phosphate shipments through Pensacola, Fla., in 1899, as follows: Tennessee Phosphate Company, foreign, 67,432 tons; domestic, 4,907 tons; total, 72,339 tons. Central Phosphate Company, foreign, 39,808 tons. Rogers, Halloway & Company, foreign, 9,019 tons. H. A. Ford, foreign, 9,489 tons. Liebig Manufacturing Company, domestic, 5,305 tons. Goulding Fertilizer Company, foreign, 3,312 tons. J. H. Carpenter & Company, foreign, 3,165 tons. J. A. Lang & Company, foreign, 2,100 tons. International Phosphate Company, foreign, 116 tons. The total foreign shipments were 134,441 tons, and domestic, 11,212 tons, making a grand total of 145,653 tons.

Several charters were recently taken from Fernandina to Antwerp and Ghent at 19s. 6d. ($4.68).

Ocean freight rates from Florida ports are about as follows: To Baltic ports, $4 per ton; Continental, $4.68, and Mediterranean ports, $4.25, while from Savannah, Ga., to the United Kingdom, $3.60 is asked. We quote as follows:

Phosphates.	F. o. b. Am. Shipping Port.	C. i. f. Un'd Kingdom or No Sea Ports.	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$8.00@8 50	8¼@8½d	$12.87@13.25
Fla. land pebble (68@73%)	4 35	7d	9.80
†Fla. Peace River (58@63%)	3.75@4.00	6¼@6½d	7.50 @ 7.80
†Tenn. rock (78@80%)	3.00@3.50	6@6¼d	9.48@10.27
‡Tenn rock (65@75%)	2.50@3 00	.....	.....
§So. Car. rock, crude	3.75@4.00	.....	.....
§So. Car. rock, dried	4 50@5.00	.....	.....
Algerian, rock (63@70%)	.....	7d	9.38
Algerian, rock (58@63%)	.....	6¾d	8.10

Concentrated phosphates, 13@15%, average P_2O_5, 60c. per unit ($8.40 per ton) at sellers' works. South Carolina acid phosphates, 14%, $6.25 per ton in bulk f. o. b. Charleston. Tennessee acid phosphates, high grade, $10 per short ton and low grade, $8 f. o. b. Nashville.

Liverpool. Feb. 27.

(Special Report of Joseph P. Brunner & Co.)

The market for heavy chemicals is firm in tone, but the demand slackened off recently. Soda ash meets with a good inquiry, without change in value, quotations varying according to market, the spot range for tierces being about as follows: Leblanc ash, 48%, £4 15s.@£5; 58%, £5@£5 5s. per ton net cash. Ammonia ash, 48%, £4 5s.@£4 10s.; 58%, £4 10.@£4 15s. per ton net cash. Bags are 5s. per ton under price for tierces. Soda crystals are in fair request at £3 2s. 6d.@£3 5s. per ton, less 5% for barrels, or 7s. less for bags, with special quotations for a few favored markets. Caustic soda is less active, but supplies are still in small compass and values are well maintained. We quote spot range as follows: 60%, £9 5s.; 70%, £10 5s.; 74%, £10 15s.; 76%, £11@£11 5s. per ton net cash.

Bleaching powder is held for £7@£7 5s. per ton net cash for hardwood packages, but there is not much fresh business reported.

Chlorate of potash is in demand, and a fair trade is reported at 4½d. per lb. net cash.

Bicarb. soda is unchanged and selling at varying prices according to market, ranging from £5 5s. to £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is strong at £12 10s.@ £12 12s. 6d. per ton, less 2½% for good gray, 24@25% in double bags f. o. b. here, while sellers only offer sparingly.

Nitrate of soda is quiet but steady at £9@£9 5s. per ton, less 2½% for spot lots in double bags f. o. b. here, as to quantity and quality.

MINING STOCKS.

Complete quotations will be found on pages 307 and 308 of mining stocks listed and dealt in at:

Boston.	**Philadelphia.**	**London.**
Colo. Springs.	**Spokane.**	**Mexico.**
Denver.	**Salt Lake.**	**Paris.**
New York.	**San Francisco.**	**Toronto.**

New York. Mar. 9.

Professional trading characterized the copper section, and good use has been made of the reported "corner" in the metal in the London market. Thus Amalgamated advanced from $91.50 to $94.50, and Anaconda from $44.50 to $46.75. British Columbia sold up to $9.50 from $9. Union of North Carolina was offered at $20 without finding buyers.

The gold and silver stocks are strong generally. Standard Consolidated of California sold up to $3.25 from $3, and Brunswick brought 29c. Little Tiger, a curbstone stock, has been hammered down to 25c. on reports that the property is not panning out satisfactorily. Isabella of Cripple Creek sold at $1.25@$1.30, Mt. Rosa at 90c., Anaconda at 42c., Work at 37c., Adams at 18c., Argentum-Juniata at 21@23c., Adams at 20c., Mollie Gibson at 26c., and Creede & Cripple Creek at 12c.

Horn Silver of Utah made its first sale in some time, bringing $1.30. Ontario sold at $8.34.

Of the Comstocks, Consolidated California & Virginia went at $1.50@$1.60, Ophir at 60@77c., Union at 36¾c., Chollar and Belcher at 30c. each, Mexican at 27@24c., and Potosi at 29c.

American Smelting and Refining was pretty well maintained at $39⅜@$39⅞ for the common, and $90@$90½ for the preferred.

Arizona Lead of Arizona is reported sold at $12½@$12⅝, apparently among insiders.

Auction sales were 32 preferred shares Westinghouse Electric and Manufacturing Company at $123; $1,000 first mortgage 5% bonds due 1917 of the Columbus & Hocking Coal and Iron Company, at 90; and $7,000 consolidated assented 7% bonds due June 1st, 1900, of the Lehigh & Wilkes Barre Coal Company, at 100.

The Colorado Fuel and Iron Company has declared another dividend of 8% on the preferred stock, payable April 2d, being for the year ended June 30th, 1897. The National Steel Company will pay its quarterly dividend of ¾% on the preferred stock March 31st.

Boston. March 8.

(From Our Special Correspondent.)

The sharp rise in spot copper in London started a little life in the stock market here, and for a day or two coppers were quite lively. So much stock came out, however, on the first signs of a rise, that the movement was checked; the market lost its breadth, closing to-day quiet and narrow.

Exception has been taken to references made in these letters to the blind pool and its tactics. The critics say "the blind pool is the life of the market." It may be; but if it is we had better have a dead market. To be beaten in fair fight is all right; but, for one, I object to being stabbed in the dark. So do many others, and there is little doubt that coppers have seen their best days in Boston. The blind pool outfit is killing them.

Among the coppers, Calumet & Hecla brought $729; Boston & Montana, $278; Tamarack, $190; Quincy, $135; Amalgamated, $94; Osceola, $74½; Butte & Boston, $63; Parrot, $44½; Wolverine, $41; White Knob, $30@$30½; Utah, $28½; Isle Royale, $26; Atlantic, $23; Old Dominion, $19; Centennial, $18; Mass, $6; Rhode Island, $4½; Winona, $2½.

In other mining stocks there was light demand. American Zinc was quoted at $16; Co-

chiti, $11; Santa Ysabel, $1. The quotation for Dominion Coal was $43; United States Oil, $17½ @$18. Agricutural Chemical Preferred brought $76.

The grand jury in the United States Court has returned an indictment against Charles H. Cole as president of the Globe Bank, on 25 counts. The offences charged are misappropriation of money and securities and making false entries in the books. Cole has 14 days in which to plead, and the case will be called at the April term.

The Central Oil Company, at its meeting in Portland this week, reduced the number of directors from 11 to 9, and elected A. A. Glazier president, H. C. Speer vice-president, Alexander H. Bruce, Simon Davis, J. Q. Bennett, John P. Morse, William L. Henry, George R. Sheldon and J. P. Underwood, directors; W. F. Pope, secretary and treasurer. The retiring directors are C. A. McDonald and J. B. Shaw.

Salt Lake City. March 3.

(From Our Special Correspondent.)

A more hopeful tone pervades the Utah mining share market, aided by the splendid performance of Daly-West, which scores an advance of $3 on the averment of the new management that any change in the dividend will be an increase, and the assurance that Centennial-Eureka is soon to begin a new dividend era. There is a slight improvement in the demand for the better prospects.

Bullion-Beck holds its newly acquired favor, as the Farnsworth regime gives promise to achieve excellent results. Centennial-Eureka remains strong, the shares here keeping nearly even pace with the Boston market. Daisy has whizzed its complete pyrotechnic orbit and the trail of the fake meteor has left fiery burns not soon to be forgotten. The futile effort to boost it to 1c.—an erstwhile favorite above 60—has all the humor of light opera. Daly softened in prospect of an assessment of 10c., should active mining be resumed, as is probable. Daly-West sold up to $15.30, the high-water mark, and considerable stock bought around $10 was brought out, occasioning a slight sagging. It did business today at $15 and $15.05, closing strong. Monday the directors meet to declare the current dividend.

Mercur sold at $5.60, with more limited offerings. The pending consolidation with the De La Mar mines has caused a demand for the shares at $5.50. There appears every likelihood that this will be consummated and will prove an excellent happening for all interested.

Silver King has declared the regular dividend of 50c., or $75,000, payable March 10th. Swansea will pay the customary $5,000 dividend on March 10th.

San Francisco. March 3.

(From Our Special Correspondent.)

There was a sharp rise in the Gold Hill stocks this week, and more sales shown in that part of the Comstock list than have been seen for a long time past. The reports of low-grade ore treatment are responsible for this. Confidence brought 77c.; Belcher, 23c.; Challenge, 20@22c.; Yellow Jacket, 18c.; Overman, 11c.; Crown Point, 10c.

This strengthened the other Comstocks and imparted quite a lively tone to the market. Consolidated California & Virginia sold for $1.45, and Potosi for 49c.

The California Supreme Court rendered a decision this week, after hearing an appeal, in the case of A. Krause against A. Durbrow, secretary of the Gould & Curry Mining Company. The case involved the right to vote on proxies on stock standing in the names of holders on the books of a corporation. The court held that the act of 1880, which permits voting on the presentation of certificates is unconstitutional, being special legislation.

The sales on regular call at the San Francisco Stock Exchange for the year to date compare as follows:

	1899.	1900.
January shares	121,955	164,400
February	350,860	112,000
Total	472 815	276,400

The poor showing in February, this year, much more than balanced the increase in January.

Business on the Oil Exchanges was lighter than usual. We note sales of West Lake at $1, and Anaconda at 60c. New companies continue to be reported.

London. Feb. 24.

(From Our Special Correspondent.)

The London mining stock market has been practically at a deadlock all the week, though at the time of writing there is a miniature boom, due to Lord Roberts' commencement of offensive warfare. The telegrams to the effect that Kimberley is relieved have produced much activity in De Beers, but as we know no details, and as the significance of the news cannot be exactly gauged, the amount of actual dealings is really very small. We have had so many disappointments in the present war that people generally are rather sceptical as to the accuracy of good news, and at the present juncture this tendency is very marked. On reading the official dispatches boldly announcing the relief of Kimberley, the average man feels inclined to shout for joy, but the fear that the real dispatch may announce that the relieving force has been surrounded by the Boers induces him to bottle up his enthusiasm for a time. This attitude finds an exact equivalent in the Stock Exchange, where everyone feels uncertain as to the immediate future and the course of current events. In other sections of the mining market the same absence of business exists, and as for the flotation of new ventures, nothing is further from the thoughts of promoters.

I have mentioned several times that the £1 shares in Stratton's Independence Company are no higher than £2 10s., though the dividends are at the rate of 40%. It is surprising that in England the quotation of such a good payer is not higher, but the fact is that the promoters have been realizing their shares, so that all demand could be supplied at £2 10s. I am informed now that their holdings are mostly disposed of, and it is possible therefore that the price may go up shortly. The third quarterly dividend of 10% has just been paid, bringing up the total amount distributed during the 9 months of the company's existence to £300,000.

The shares of a company called the Upper Ten Gold Mining Company, a Colorado corporation, are being offered for subscription in England by representatives of the company. The company owns 20 claims in the Eldora District, Colorado, and of these 20, the Helene W. is stated to be almost ready for shipping operations. The company states that the vein is 4 ft. wide and consists of sulphide ore running as high as $50 per ton. No independent information can be obtained here, but perhaps some of your local correspondents can tell something about the property. The Colorado company has a capital of $850,000 in $1 shares, and 50,000 of these are being offered in England at 15c. each. The office of the company is at Colorado Springs. The president is Mr. Shapcott and the superintendent Mr. Wanner. I do not suppose that they will raise much money in England.

The formation of the business of Lewisohn Brothers of New York into a joint stock company under the name of the United Metal Selling Company, has created much interest in London. In some quarters it is supposed that the shares of this new company are to be offered for public subscription, but this seems hardly likely. It is also said that the Calumet & Hecla will no longer dispose of their copper through this selling firm, as that mine did not go into the Amalgamated Copper Company, and that other mines in the lake region will follow suit. As the directors of the Selling Company are practically identical with the Amalgamated Company, it is evident to English metal people that the Lewisohns have gone over entirely to the Rockefeller interest and will devote themselves solely to the disposal of their production.

Paris. Feb. 25.

(From Our Special Correspondent.)

Perhaps the most prominent feature in the market has been the strength of the metallurgical shares. Both our home stocks and the Russian group continue to bring prices really out of all proportion to the dividend returns.

The copper shares are also very strong. The prices of the metal have improved. Moreover, here and in Berlin there is a great speculation for the rise in Rio Tintos, and this has carried the minor stocks with it to some extent.

The zinc and lead shares, which have been rather quiet recently, have been in more request at advancing prices.

Le Nickel shares have again improved. The new plan for naval increase will be adopted without doubt, and that involves a large demand for nickel in making armor plates. Huanchaca (silver) has revived under a better administration at the mine, and the shares sold at 91 fr. last week.

The Transvaal gold stocks have again been excited, moving up and down in more or less correspondence with the news from South Africa. Among the better informed class a belief in the final success of Great Britain is coming to be accepted; but many still think the Boers will be successful. There has not been much selling by investors lately.

The foreign merchandise trade of France in January is reported by the Ministry of Commerce as below:

	1899.	1900.
Imports	Fr. 361,395,000	Fr. 381,358,000
Exports	237,752,000	262,754,000
Excess, imports	Fr. 123,643,000	Fr. 118,604,000

The imports showed an increase this year of 19,963,000 fr., or 5.5%, while the exports increased 25,002,000 fr., or 10.5%; leaving a decrease of 5,039,000 fr., or 4.1%, in the balance of imports.

Le Societe des Mines d'Aniche has recently found three rich seams of coal in the territory between Villers-Campaux and Pecquencourt in the Department du Nord. The seams vary in thickness from 0.75 to 1.25 m., and were struck at depths varying from 160 to 200 m.

The one-hundredth anniversary of the organization of the Bank of France, in February, 1800, was celebrated recently by a reception at the Bank. In an address it was stated that it took two year to secure subscriptions to the whole of the capital stock, which was 30,000,000 fr. in shares of 1,000 fr. each. When the Bank was opened only 7,500 shares had been taken. On the list of the original stockholders is found the name of "Napoleon Bonaparte, First Consul." For the first year of business the total discounts were about 21,000,000 fr., and the average rate 6%. Last year the total discounts were 713,900,950 fr. The capital stock is now 182,500,000 fr., and the shares sell at more than four times their par value.

The feeling against England, though perhaps a little less noisy, continues very strong and as unreasonable as ever.

Azote.

DIVIDENDS.

NAME OF COMPANY.	Latest Dividend. Date	Per share.	Total.	Total to date.
†Am. St. & Wire com	Apr. 2	$1.75	$875,000	$875,000
†Am. St. & Wire, pf.	Apr. 2	1 75	700,000	4,200,000
*Am. Zinc, Kas.	Mar. 12	1.00	5.000	35,000
*Argonaut, Cal.	Mar. 26	.10	20,000	480,000
*Boston Aurora, pf.	Mar. 6	.17	5,280	44.880
*Boston-Duenweg	Mar. 1	.10	4,000	44,000
*Boston Get There, pf.	Mar. 10	.10	2 250	18,000
*Boston Little Circle	Mar. 1	.10	10,000	110,000
*Boston Prov , pf.	Mar. 2	.05	750	9.750
*Bullion-Beck	Mar. 15	.10	10,000	2,468,400
*Bunker Hill & Sull.	Mar. 3	.07	21,000	864,000
Calumet & Hecla, Mich	Mar. 30	20.00	2,000,000	68,850,000
*Central Lead, Mo	Mar. 15	.50	5.000	157,000
*Commonw'th, pf., Mo.	Mar. 1	.05	5,000	35,000
*Con. Gold Mines.	Mar. 25	.01	10,000	40,000
*Cordell Zinc, Mo.	Mar. 15	.05	5,000	10,000
*Delta, Mo	Mar. 1	.01	895	6,785
*Doe Run Lead, Mo	Mar. 15	.50	2,500	97,500
*Empire State, Idaho	Mar. 15	.30	29,554	406,700
Federal Steel com.	Mar. 20	2.50	1 162,107	1,743.161
*Gold Coin	Mar. 25	.02	20,000	400,000
*Golden Cycle, Colo.	Mar. 18	.05	10,000	288,500
*Grass Valley Expl.	Mar. 20	.25	7,500	52 500
*Gwin, Cal	Mar. 12	25	5,000	116,500
†International Sil., pf	Apr. 1	1 75	743,750	743,750
*Modoc, Colo.	Mar. 15	.01	5,000	169,000
*Mo. Zinc Fields, pf.	Mar. 10	.16	2,643	29,242
†National Lead pf.	Mar. 15	1.75	260,844	8,607,060
*New York Zinc, Mo	Mar. 2	.25	7,000	42,000
*N.Y.& Hond. Rosario	Mar. 17	.10	15,000	1,205,000
Pacific Coast Borax	Dec. 29	5.00	100,000	522,500
*Penna Con. Cal	Mar. 8	.10	5 150	151,625
*Portland, Colo.	Mar. 15	.02	60,000	2,767,080
Republic, Wash.	Mar 15	.01	35,000	385 000
*Silver King, Utah	Mar. 10	50	75,000	2,675.000
*Smuggler Colo	Mar 15	.03	30,000	1,300 000
†St. Joseph Lead, Mo.	Mar. 20	.50	37,500	2,972,000
*Swansea, Utah.	Mar. 10	.05	5,000	221,500
Wolverine, Mich	Apr. 2	2.00	120,000	390,000

* Monthly. † Quarterly.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No	Delinq.	Sale.	Amt.
Alaska	Utah	..	Feb. 21	Mar. 10	.02
Alliance	Utah	23	Feb. 17	Mar. 10	.10
Alta	Nev.,	61	Feb. 26	Mar. 19	.05
Amelia	Cal..	..	Mar. 15	....	.02½
Andes	Nev.,	50	Mar. 6	Mar. 26	.05
Badger	Ore..	1	Apr. 2	May 2	.10
Belle	Cal	...	Mar. 14	....	.02
California Borax	Cal..	2	Mar. 5	Apr. 2	2.00
Caledonia	Nev,.	48	Mar 12	Apr. 2	.15
Central Eureka	Cal..	14	Mar. 17	Apr. 9	03
Con. Imperial	Nev.,	44	Feb. 27	Mar. 20	.01
Crown Point	Nev.,	78	Mar. 29	Apr. 19	.05
Exchequer	Nev.,	41	Feb. 26	Mar. 29	.03
Goleta Con	Cal..	1	Mar. 1	Apr. 5	.06
Golden Star	Cal..	...	Mar. 15	....	.00½
Great Eastern	Utah	3	May 10	Apr. 2	.00½
Joe Bowers Ext.	Utah	6	Mar. 14	Apr. 4	.01
Little Chief	Utah	3	Mar. 31	Apr. 18	.01
Lion Con	Utah	2	Mar 10	Mar. 27	.00½
Marina Marsicano	Cal..	22	Feb. 27	Mar. 15	.03
Mariposa Com'l & Mg.	Cal..	15	Mar. 12	Apr. 3	10.00
Martha Washington	Utah	4	Mar. 19	Apr. 7	.01
New Klondike	Utah	4	Mar. 7	Mar. 23	.00½
New Erie	Utah	3	Mar. 9	Mar. 26	.00¾
Omaha	Utah	1	Apr. 2	Apr. 17	.02
Ophir	Nev.,	77	Mar. 8	Mar. 28	.20
Oriental	Cal..	..	Mar. 10	....	.10
Reward	Cal.	8	Mar. 3	Mar. 27	.02
Sierra Nevada	Nev.	118	Mar. 13	Apr. 2	.15
Silver Park	Utah	1	Mar. 10	Mar. 28	.04
Snow Flake	Utah	...	Mar. 1	Mar. 31	.05
Star	Utah	..	Jan. 29	Mar. 29	.10
Success	Utah	8	Mar. 17	Apr. 14	.01
Texas	Cal..	...	Mar. 12	....	.03
Tetro	Utah	11	Feb. 15	Mar. 10	.05
Yankee Con.	Utah	2	Mar. 31	Apr. 17	.01
....	....	..	....	....	....
....	....	..	....	....	....

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Allouez	Mich	Mar. 14	11 William St., N. Y.
Cnampion	Cal.	Apr. 13.	San Francisco, Cal.
*Daisy	Utah.	Mar. 14	Salt Lake City, Utah.
Goleta	Cal.	May 1s.	San Francisco, Cal.
Hale & Norcross	Nev.	Mar 15.	San Francisco, Cal.
Mayflower	Mich	Mar. 21.	60 State St., Boston.
*Primrose	Utah.	Mar. 13.	Salt Lake City, Utah.
Sacramento	Utah.	Mar. 27.	Salt Lake City, Utah.
South Eureka	Cal.	Mar. 16.	San Francisco, Cal.
South Swansea	Utah.	Apr. 3	Salt Lake City, Utah
Tenn. C. I. & RR.		Mar. 13.	Tracy City, Tenn.
Union	No. Car.	Mar. 22	60 State St., Boston.
Washington.	Mich.	Mar. 27.	60 State St., Boston.

*Special meeting.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY	Location.	Par val.	Mar. 2. H.	Mar. 2. L.	Mar. 3. H.	Mar. 3. L.	Mar. 5. H.	Mar. 5. L.	Mar. 6. H.	Mar. 6. L.	Mar. 7. H.	Mar. 7. L.	Mar. 8. H.	Mar. 8. L.	Sales
Adams	Colo..	10	.12	....	.12	....	.20	....	.20	....	.18	....	....	....	500
Alamo	"	25	.18	....	.17	....	.17	....	.18	....	.16	....	....	....	3,000
Alice	Mont.	25	.60	....	.55	....	.50	....	.55	....	.55	....	....	....	200
Amalgamated C	"	100	90.75	90.00	92.00	91.00	91 50	91.25	93.00	91 50	93.75	93.25	94.75	94.25	1,300
Anaconda, c	"	25	44.75	43.25	44.75	....	....	....	45 .25	44.50	46.75	45.50	47 00	....	17,9.6
Anaconda Gold	Colo..	5	.41	....	.40	....	.37	....	.42	....	.38	....	....	....	5.0
Argentum-Jun..	"	2	.18	....	.19	....	....	....	.23	....	.21	....	....	....	....
Best & Belcher	Nev..	9	.32	....	.32	....	.30	....	....	....	....	....	....	....	....
Breece	Colo..	25	1.30	....	1.40	....	1 40	....	1.40	....	1.40	....	....	....	....
Brit.Col.Copper	B. C..	10	9 50	8.50	10.00	8.50	10.00	8.50	10.00	8 50	10.00	8.50	10.00	9 50	200
Brunswick	Cal..	1	.26	....	.26	....	.25	....	.25	....	.29	....	....	....	1,000
Cnollar	Nev...	5	.35	....	....	....	.30	....	.25	....	.25	....	....	....	600
Comst'k T	"	100	.08	....	.03¾	....	....	....	.04	....	.03	....	....	....	1,000
Con. Cal. & Va..	"	2½	1.30	....	1.35	....	....	....	1.60	1.50	....	....	....	....	1,000
Cr & Cr. Creek	Colo..	1	.11¾	....	11¾	....	.12	....	.12	....	.11	....	....	....	....
Cripple Cr. Con.	"	1	.22	....	.22	....	.20	....	.20	....	.20	....	....	....	....
Deadw'd Terra.	S.Dak	25	.60	....	.55	....	.55	....	.50	....	.55	....	....	....	....
Elkton	Colo..	1	....	....	1 15	....	....	....	....	....	1.20	....	....	....	....
Findley	"	1	.13	....	12¾	....	....	....	....	....	....	....	....	....	....
Garfield Con	"	1	.18	....	.17	....	....	....	....	....	....	....	....	....	....
Golden Age	"	1	....	....	.05	....	....	....	.04½	....	....	....	....	....	2,000
Golden Fleece	"	1	.27	....	.26	....	.27	....	.27	....	.27	....	....	....	....
Hale&Norcross	Nev	3	.30	....	.27	....	.27	....	.28	....	.27	....	....	....	....
Homestake	S. Dak	100	75.00	70.00	75.00	70.00	75.00	70.00	75.00	70.00	75 00	70.00	....	....	100
Horn Silver	Utah..	25	....	....	1.20	....	1.20	....	1.20	....	1.30	....	1.40	1.30	....
Iron Silver	Colo.	20	.70	....	.75	....	.70	....	.65	....	.68	....	....	....	2.0
Isabella	"	1	1.25	....	1.30	....	1.30	....	1.25	....	1.25	....	....	....	....
Jack Pot	"	1	.89	....	....	....	....	....	.60	....	....	....	....	....	1,2.0
King & Pemb	Ont..	10	.40	....	.30	....	.26	....	....	....	.25	....	....	....	100
Lacrosse	Colo..	10	.14	....	.14	....	.12	....	.12	....	.14	....	....	....	1,050
Leadville Con	"	10	.07	....	....	....	.05	....	.06	....	.06	....	....	....	....
Little Chief	"	1	.17	....	.19	....	.17	....	.17	....	....	....	....	....	2,000
Mexican	Nev..	8	.26	.25	.29	....	....	....	.27	....	.24	....	....	....	....
Mollie Gibson	Colo.	5	.23	....	.22	....	.23	....	.23	....	.26	....	....	....	1,1 0
Moulton	Mont.	25	.25	....	.30	....	.25	....	.25	....	.30	....	....	....	300
Mt. Rosa	Colo..	1	.90	....	.85	....	.9.	....	.8.	....	.80	....	....	....	30
Ontario	Utah.	100	8.25	....	8.25	....	....	....	8.00	....	8 34	....	....	....	100
Ophir	Colo	1	.60	....	.50	....	.54	....	.6.	....	.77	....	....	....	10
Pharmacist	"	1	.16¾	....	.15	....	.14½	....	.12½	....	.12½	....	....	....	1,600
Phoenix	Ariz..	1	.12	....	.10	....	.12	....	....	....	.12	....	....	....	1,000
Plymouth	Colo..	1	.21	....	.18	....	.18	....	.14	....	.12	....	....	....	....
Portland	"	1	2.80	....	2 80	....	2.25	....	2.30	....	....	....	....	....	200
Potosi	Nev..	3	.28	....	....	....	....	....	.30	....	.29	....	....	....	....
Quicksilver	Cal..	100	2 00	....	1.80	....	1 80	....	1.50	....	.80	....	....	....	300
do. pref	"	100	7.50	....	7 5.	....	7.50	....	7.10	....	7.50	....	....	....	100
Savage	Nev..	2	.30	....	.10	....	15	....	.14	....	.16	....	....	....	....
Sierra Nevada	"	3	....	....	4.)	....	.33	....	.32	....	.32	....	....	....	....
Small Hopes	Colo..	25	1.05	....	1.05	....	1.05	....	1.05	....	1 00	....	....	....	200
Standard Con	Cal ..	1	3.00	....	2 80	....	....	....	3.10	3.00	3.20	3.15	3.25	....	1,300
Tenn Copper	Tenn	10	15 00	13.50	14.00	13.50	13.50	12.00	13 50	12.00	14.00	13.00	14.00	13.50	....
Tornado	"	....	....	....	.55	....	....	....	....	....	....	....	....	....	1,000
Union Con	Nev...	2½	.18	....	.20	....	.20	....	.20	....	3.6%	....	....	....	1,000
Utah	Utah	1(	.05	....	.15	....	.08	....	.08	....	07	....	....	....	....
Work	Colo	1	.35	....	.36	....	....	....	.37	....	....	....	....	....	2,100
Yellow Jacket	Nev..	3	.15	....	.15	....	18	....	.17	....	.17	....	....	....	....

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.	.....	$100	39¾	31	40	39½	39½	39⅝	39½	38⅛	39	38¾	39	....	5,295
" " " pf	.....	100	91	90	9 3¾	90⅝	90⅝	....	90⅝	9 0	9 3⅛	....	93¾	....	3,514
Am.S.& W Con	.....	100	56⅛	6 ⅜	56⅝	54	56⅛	55	55	53¾	54⅝	53⅛	54	....	65,.23
" " pf r n	.....	100	90	90	9 ⅜	....	....	....	90⅜	9 3¾	90	....	9.⅝	....	2,502
Am. Tin Plate	.....	100	32⅝	32	32⅝	32	....	32	31⅜	3.¾	31¼	30	32	....	6,515
" " " pf	.....	100	81⅛	81	....	....	....	....	8 3⅛	81	82⅝	....	....	....	65
Col. Fuel & I.	Colo..	100	43⅛	43	43¾	42⅝	44¼	43⅝	43¾	43	42⅝	....	42⅝	....	2,705
Col. & H.C.& I	" ..	100	....	....	....	....	....	....	16¼	16	....	....	....	....	3.0
Federal Steel	.....	100	52⅜	50⅜	51⅞	5.⅜	52¾	51	51⅜	50	51⅛	50⅜	50⅜	....	47,635
" " pf	.....	100	72⅜	72	73	72	73	72¾	72½	72	72⅜	72	72	....	5,357
Fleming'n C.&C	W.Va.	100	21¾	19	2.⅜	19	21⅜	19	21⅜	19	21⅜	19	21¾	19	....
Int'l Pump	"	100	18⅜	17¾	18⅝	17⅜	19	18⅜	19	19¼	18¾	18	18⅜	17¾	....
National Lead	N. Y.	100	....	....	28⅜	....	2.¼	....	28¼	28⅜	28⅝	28	28¼	....	1,475
" " pf	.....	100	....	....	....	....	....	....	03½	....	....	....	104⅝	....	350
National Salt	.....	100	49⅛	48	50	49	50	48¾	50	48⅜	49⅛	45	49⅝	48¾	100
" " pf	.....	100	80	78	80	78	80	78	80	78	80	78	81	78⅝	....
Nat'l Tube	.....	100	53⅜	53¼	53¾	53⅛	53	52¾	53¼	5.¾	52⅜	52	52	51⅝	1,5.0
Press. St. Car	Pa..	100	54¾	54¾	....	....	....	....	53⅝	48	53	....	....	....	2 2.7
" " " pf	"	100	85	....	....	....	....	....	86½	....	....	....	....	....	175
Republic I. & S.	....	100	22¼	21¾	22⅜	21¼	2.⅜	21¼	21¼	19⅜	21¾	20	2.⅜	....	18,015
" " " pf	.....	100	67⅜	67	66⅝	....	67	66⅝	67	6.¼	67¾	66	....	....	3,145
Sloss-Shef.	.....	10.	8.⅜	29⅜	30¼	28⅝	30¼	28⅝	30	29	30	29	28½	27⅛	....
" " pf	Ala..	100	70	68	69	67	69	67	70	67¼	69	67	69	67	100
*Stan.Oil c f N J.	"	100	528	52.	529	5.4	530	525	530	25	5.0	526	529	525	25
Tenn.C.,I.&R.R.	"	100	93¼	90	95	91	95¼	92	95	91⅜	93¾	9.¼	91⅜	....	21,803
" " " pf	"	100	....	....	....	....	....	....	....	....	....	....	....	....	....
U.S.Cast I.P.&F	.....	10.	8⅜	7⅜	8¼	7⅜	8	7	8	7	8	7	8	7	....
" " " pf	.....	100	47	45	47	45	47	45	47	45	47	45	47	45	....
Va. Coal & C	W.Va.	100	25	23	27	23	25	23	25	23	25	23	....	....	....

* Ex-dividend. Total sales, 213,020.

PHILADELPHIA, PA.*

NAME OF COMPANY.	L'cation.	Par Val.	Mar. 1. H.	Mar. 1. L.	Mar. 2. H.	Mar. 2. L.	Mar. 3. H.	Mar. 3. L.	Mar. 5. H.	Mar. 5. L.	Mar 6. H.	Mar 6. L.	Mar. 7. H.	Mar. 7. L.	Sales
Am. Alkali	.....	.....	2 38	....	2.38	....	....	....	2.50	2 37½	2.50	2 37½	2 35	2.25	3,6 3
" " pf	.....	.....	....	....	....	....	....	....	62½	....	....	....	.50	....	1,200
Bethlehem Irn	Pa.	.....	58.00	....	....	....	....	....	....	....	....	....	....	....	21
§Bethlehem S'l	"	$50	....	....	17 50	17.00	....	....	....	....	17.50	....	17 50	....	377
Cambria Iron	"	50	....	....	44.00	....	44 00	....	....	....	44.75	....	44 00	....	2 5
Cambria Steel	"	50	21.00	20.75	2.,85	20.50	2.. 6.)	20.50	29 88	20 75	2.. 7	20.63	20 5	19 75	7,601
Susq. I & S	"	10	3 88	....	4.00	....	4.13	3.88	3.88	3.75	3 88	3.75	3.75	3.38	4,0.2
United Gas I	"	50	136¾	....	150¼	149	149¾	148	150	149¾	149¾	....	149¾	148	1,055

Total shares sold, 18,104. * Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

TORONTO ONT.

NAME OF COMPANY.	Par val.	Feb. 26 B.	Feb. 26 A.	Feb. 27. B.	Feb. 27. A.	Feb. 28. B.	Feb. 28. A.	Mar. 1. B.	Mar. 1. A.	Mar. 2. B.	Mar. 2. A.	Mar. 3. B.	Mar. 3. A	Sales
Ontario:														
Empress	$1	.....	.....	.01	.01¾	.01	.02	.01½	.....	.01¾	.....	.01¾	.....	1,000
Golden Star	1	.....	.....	.19¾	.2	.20	.23	.19¾	20¾	.19¾	.21¾	20¾	.22½	5,500
Ham Reef	1	.....	.....	.10	.1.¾	.10	.12¾	.10	.12¾	.10	.12¾	.10	.12¾	.....
Olive	1	.....	.....	.60	.70	.60	.80	.55	.66	.50	.60	.52	.58	.....
British Col.:														
Athabanka	1	.....	.....	.27	.31	.28	.32	.28	.32	.28	.32	.28	.32	500
Big Three	1	.....	.....	.07¾	.09¼	.06	.08½	.06¾	.08	.07¾	.09¾	.08½	10	6,0.0
CaribooM'K	1	.....	.....	.75	.85	1.00	.....	1.60	.....	.75	.83	.75	.82	.....
Crow's N C	25	.....	.....	34 00	.....	34.00	.....	34 00	.....	32.50	34.00	35 00	40 00	10
Dardanelles	1	.....	.....	.04¾	.05¾	.04	.06	.04	.05	.08	.05	.04	.05	4,500
Deer Trail	1	.....	.....	.08	.09	.07	.10¾	.06¾	.08	.06¾	.07¾	.07¾	.09¾	6,500
Evening Star	1	.....	.....	.07	.08¾	.07	.08¾	.07	.08¾	.07¾	.08¾	.7¾	.08¾	7,0.0
Fairview	1	.....	.....	.02¾	.03	.02¾	.03.	.02¾	.03.	.01	.0325	.02¾	.03¾	8,000
Knob Hill	1	.....	.....	.75	.....	.75	.....	.15	.....	.15	.....	....	.....	.....
Lone Pine S	1	.....	.....	15	.17¾	.15	.18	.15	.17¾	15	.18	.15	.17¾	2,000
Minnehaha	1	.....	.....	.09	.10¾	.08	.11	.08	.11	.08¾	10	.08	.10	5,000
Mont Cristo	1	.....	.....	.02	.04¾	.03	.04¾	.03	.04¾	.03¾	.04¾	.03¾	.04¾	3,0.0
Mont &Lon	0.24	.....	.....	.27	.30	.27	.30	.27	.30	.27	.30	.27	.30	.....
Noble Five	1	.....	.....	.09¾	.12	.08¾	.10¾	.08¾	.10¾	.08	.12	.08	11	.....
North Star	1	.....	.....	1.10	1 18	1.08	1 12	1.14	1.15	1.08	1 12	1.10	1.15	500
Princess M	1	.....	.....	.06¾	.07	.06¾	.07	.06¾	.07	.06	.08	.06	.08	2,000
Rathmullen	1	.....	.....	.04	.05	.04	.05	.04	.05¾	.01	.05	.03¾	.04¾	1,00.
Republic	1	.....	.....	.90	1.00	.88	.96	.88	.93	.89	.95	.98	1.00	1,.0
St Elmo	0.25	.....	.....	02¾	05	.04	.....	.03¾	.....	.03¾	.....	.03¾	.....	500
Victory Tri.	1	.....	.....	.02	.04	.03	.04¾	.03¾	.03	.02¾	.03	.03¾	.03¾	4,.0
Virtue	1	.....	.....	.75	.76	.74	.83	.79	.82	.86	.92	1.00	.....	500
War Eagle	1	.....	.....	1.30	1.37	1.30	1.37	1.29	1 34¾	1.28	1.31	1.31	1.38	.....
Waterloo	0.10	.....	.....	.06	.06¾	06	09	.05	.09	.06	.09	06	08	1,000
White Bear	1	.....	.....	02	02¾	.02	02¾	.02¾	.03¾	.02¾	.04¾	.02¾	.03¾	5,500
Winnipeg	1	.....	.....	.15	.21¾	.17	.23	.16	.20	17½	.20	.18	.25	.....
Develop Co.														
B.C.G.Field	1	.....	.....	.02¾	.03¾	02¾	.03¾	.02¾	.03¾	.02¾	.03¾	.02¾	.03¾	
Can. G. F.S.	0.10	.....	.....	.06	.06¾	.6.	.06¾	.06	.07	.06	.07	.06	07	12,000
Gold Hills	1	.....	.....	.04¾	.05¾	.04¾	.06	.04¾	.05¾	.06	.06¾	.05	.06¾	11,440

BOSTON. MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	Mar. 1. H.	Mar. 1. L.	Mar. 2. H.	Mar. 2. L.	Mar. 3. H.	Mar. 3. L.	Mar. 5. H.	Mar. 5. L.	Mar. 6 H.	Mar. 6 L.	Mar. 7. H.	Mar. 7. L.	Sales
Adven'u'e,Cons	$25	100,000	....	....	....	....	....	....	....	....	5.00	....	....	....	20
Aetna, Cons. g.	5	100,000	....	....	....	....	....	....	....	....	4 00	....	....	4.00	200
Alloues	25	80,000	2.50	....	....	....	....	....	....	....	2.75	....	....	....	250
Amal. Cop.	10(	750,000	91.50	91.00	91.25	91.00	91.00	90.25	91.50	90.50	93 25	91.00	91.50	92 50	2,668
m. Z. L. & S.	25	60,00.	15.88	....	....	....	....	....	....	....	15.00	....	16.00	....	465
Anaconda	25	1,2.0,0	44.00	....	....	....	....	....	....	....	....	....	46 00	....	65
Arcadian, c	25	150,000	16.50	16.00	15.00	....	....	....	....	....	16 50	16.00	16.75	....	935
Arnold, c	25	60,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Ashbed	25	400,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Atlantic, c	25	45,000	....	....	....	....	....	....	....	....	23.00	....	23 00	....	80
Baltic, c	25	100,000	20.50	....	21 25	....	21.75	20.50	20.50	....	21 00	....	20.50	....	803
Bingham, c, g	10	190,000	11 2	10.88	11.00	10.6.	18 75	18.63	....	....	....	....	10.88	....	760
Bonanza Dev.g	10	300,000	1.25	....	1 38	1.25	....	....	....	....	....	....	1.25	....	835
Boston, q	10	10.,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Boston&C C	2	200,000	....	....	.15	....	....	....	....	....	....	....	....	....	400
Bos.&Mon,Tr R	25	150,000	267	265	269	268	270	269	....	....	280	274	278	....	612
Breece	25	200,000	....	....	....	....	....	....	....	....	....	....	....	....	....
British Col.	$	200,000	....	....	....	....	....	....	....	....	9.50	....	....	....	50
Butte & Bost., c	10	200,000	62 00	60.00	60.00	59 00	58.50	....	....	....	63.50	60.00	64 00	63 00	1,540
Cal. & Hecla, c	25	100,000	765	760	755	760	760	755	*729	....	*730	....	729	725	134
Centennial, c	10	300,000	17 00	....	16.50	....	17.00	....	17.00	....	17.50	....	18.50	17.50	1,525
Cent'l-Eureka	25	90,000	....	....	23.00	....	22.50	....	23 25	22.25	....	....	23.00	....	182
Central Oil	25	100,000	18.50	....	....	....	....	....	....	....	....	....	....	....	25
Cochair, g	25	60,050	12 25	10.50	12.00	11.00	11.50	11 00	11.00	10.50	11.25	11.00	11.00	10.50	3,136
Corr Z.n.Mg&Sm	10	157,000	....	....	....	....	3.25	....	....	....	....	....	....	....	50
Copper Range	10	110,0.0	24.00	22.50	....	....	....	....	....	....	....	....	....	....	210
Dominion Coal	25	100,000	43.00	....	43.50	43.00	44.00	42.75	43.00	....	43.00	....	43.50	43.00	1,040
do. pref.	100	150,000	....	....	....	....	....	....	....	....	117	....	117	....	24
Elm River	100	20,000	....	....	....	....	4.00	....	4.75	....	....	....	4.75	4.50	160
Federal Steel	12	100,0.0	53 63	52.50	52.25	50.63	51.00	....	51 75	51.00	51 .25	50 25	51.50	51.50	2,969
do. pref	100	464,5.3	....	....	72.00	....	....	....	73 .25	72.50	72.5.	72.00	73 00	....	170
Franklin, c	100	532,610	....	....	14.50	14.25	14 00	....	....	....	14.00	....	....	....	260
Gold Coin	25	100,000	.15	.10	.10	....	....	....	....	....	....	....	....	....	2,000
I. Royal Con. c	25	100,000	26.25	26.00	25.63	25.50	25.50	25.00	25.00	....	26.00	25 00	26 00	....	9.0
Mass. Con	25	100 000	....	....	....	....	6.00	....	6.00	....	....	....	6 00	5.75	85
Mayflower	25	10 ,000	....	....	2.00	....	....	....	....	....	....	....	....	....	100
Melones	10	167,577	....	....	....	....	....	....	1.25	....	....	....	1.19	....	300
Merced, g	15	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Michigan	25	100,9.9	....	....	6 00	....	....	....	6.00	5.50	5.25	5.00	5 00	....	1,350
Mohawk, c	25	100,000	13.00	12.63	13.50	13.13	13 50	....	13.50	....	13.50	13.00	13.50	13.00	1,325
Montana C & C	5	100,000	....	....	7.25	....	7 13	....	6 50	....	7.00	....	....	....	910
N.A.Gold Dre'g	10	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Old Colony, c	25	100,000	3.75	3.50	3.25	....	....	....	....	....	3.00	....	....	....	250
Old Dominion, c	25	150,000	18.88	....	18.25	....	18.50	....	....	....	....	....	2. 00	....	32
Osceola, c	25	98,000	73 50	....	75 00	74.00	....	....	74.00	....	75.00	74.0.	74.75	72.63	685
Parrot, s c	10	229,850	43.50	43.00	43.00	42 5.	42.50	....	44.5.	42 00	44.00	42.75	45.00	44.00	1,467
Pioneer, q	10	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Quincy, c	25	100,000	136	135	135	....	34	....	133	....	135	....	135	....	111
Rhode Island	25	100,000	....	....	....	....	4.50	....	....	....	....	....	5.00	4.50	72
Santa Fe, g. c	10	250,000	5.50	....	6.00	5.50	....	....	....	....	5.50	....	6.00	....	100
San. Ysabel, g	5	130,000	....	....	....	....	....	....	....	....	2.00	1.88	1.00	....	2,170
Tamarack, c	25	60,000	190	189⅜	....	....	....	....	190	....	....	....	190	....	44
Tecumseh	25	80,.0	....	....	....	....	....	....	....	....	....	....	....	....	....
Tri Mountain	25	100,000	6.75	....	6.50	....	....	....	7.25	7 00	7.00	....	....	....	820
Union C. L	25	80,000	....	....	....	....	....	....	....	....	....	....	....	....	....
United States	25	250,000	....	....	....	....	....	....	9.00	....	....	....	....	....	50
U. S. Oil	25	100,000	16.75	....	17.50	16.75	17.50	....	17.25	....	....	....	18.00	17.75	440
Utah Cons,g. c	5	3.0,000	....	....	....	....	28.50	28.25	28.75	....	28.00	27.50	29.13	28.50	1,090
Victoria	25	100,0.0	....	3.50	....	....	....	....	3.50	....	....	....	2 63	....	40
Washington	25	40,000	....	....	....	....	....	....	....	....	....	....	....	....	....
White Knob	100	50,0.0	30.00	....	....	....	....	....	....	....	30.50	30 25	31.50	30.00	1,050
Winona, c	25	10 ,000	....	....	....	....	....	....	....	....	3.00	....	2 63	....	200
Wolverine, c	25	60,000	40.50	....	40.50	....	40.50	40 00	....	....	41.00	40.50	41.00	....	315
Wyandotte	25	100,0.0	....	....	....	....	....	....	....	....	1.50	....	1.50	....	230

† Official quotations Boston Stock Exchange. Total sales, 35,314. * Ex-dividend.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	Mar. 1	Mar. 2.	Mar. 3.	Mar. 5	Mar. 6.	Mar. 7
Belcher	Nev.	$3 00	.24	.26	.28	.27	.27	.28
Best & Belcher	"	3 00	.36	.35	.39	.38	.36	.37
Caledonia	"	3.00	.47	.50	.81	.73	.74	.74
Challenge Con	"	3.00	.22	.23	.29	.23	.22	.24
Chollar	"	3 00	.30	.26	.27	.28	.27	.26
Confidence	"	3.00	.84	.80	.88	.85	.80	.77
Con. California & Virginia	"	2 50	1 40	1.40	1.50	1.45	1 40	1 50
Crown Point	"	3.00	.12	.12	.15	.13	.15	.13
Gould & Curry	"	3.00	.13	.14	.16	.15*	.14	.14
Hale & Norcross	"	3.00	.32	.30	.34	.31	.31	.32
Justice	"	2.00	.08	.09	.08	.07	.07	.06
Mexican	"	3 00	.20	.23	.24	.24	.21	.23
Occidental Con	"	3.00	.14	.15	.17	.16	.13	.15
Ophir	"	3.00	.55	.55	.58	.55	.53	.57
Potosi	"	3.00	.33	.31	.30	.28	.24	.26
Savage	"	2.50	.13	.13	.15	.14	.13	.14
Sierra Nevada	"	3.00	.36	.35	.37	.36	.36	.36
Standard Con	Cal.	10.00	2.75	2.75	2.75	2.75	2 75	2.60
Union Con	Nev.	2.50	.21	.23	.24	.24	.20	.20
Utah Con	"	1.00	.08	.08	.10	.09	.09	.09
Yellow Jacket	"	3.00	.18	.19	.20	.2.	.18	.18

Official telegraphic quotations of San Francisco Stock Exchange

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Feb. 23. H.	Feb. 23. L	Feb. 24. H.	Feb. 24. L	Feb 26. H.	Feb 26. L.	Feb . . H.	Feb . . L.	Mar 1. H	Mar 1. L	Mar 2. H.	Mar 2. L.	Sales
Anaconda	10 000	$5.00	.55	.5.	6.	.53	....	....	....	....	....	....	.65	.60	1,900
Barker Ranch	2 0,0

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val	Feb. 24. B.	Feb. 24. A.	Feb. 26. B.	Feb. 26. A.	Feb 27. B.	Feb 27. A.	Feb. 28. B.	Feb. 28. A.	Mar 1. B.	Mar 1. A.	Mar. 2. B.	Mar. 2. A.	Sales.
Acacia	$1	.87½	.87¾	.87½	.87¾	.87½	.877	.87	.87¾	.87¾	.88	.87½	.87¾	75,824
Aiame	1	.17	.17¾	.17	.17¾	.17	.17¾	.16½	.17¾	.16½	.17¾	.16¾	.172	5,060
Am. Con	1	.06½	.06¾	.06¾	.07	.....	.07	.06½	.06¾	.06½	.06¾	.06	.06¾	41,000
Anaconda	1	.45	.46	.42	.43¾	.40¾	.43¾	.39	.....	.....	.....	.40	.45	12,700
Anchor	1	.027	.03¾	.03	.03¾	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾	.03	.....	.....
AnchoriaL	1	.9)	.....	9)	.....	.90	.....	.90	.....	.91	.....	.90	.....	60,000
Antelope	1	.0 17	.03¼	.03¾	.03¼	.03¼	.03¾	.03¼	.03¾	.03¾	.03¼	.03¾	.03¾	39,000
Aola	1	.05¾	.05¾	.05¼	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.05¾	.06	23,000
Arcadian	1	.07¼	.07¾	.07¾	.07¾	.07¾	.07¾	.....	.07¾	.07¾	.....	.07	.07¾	5,000
Arg'ntum J	1	.21¾	.25	.21¾	.22¾	.....	.21¾	.18	.20	.18	.20	.19	.20	4,050
Banner	1	.04¾	.047	.04¾	.047	.04¾	.043¾	.04¾	.04¾	.04¾	.04¼	.04¾	.04¾	18,000
Battle Mt.C.	1	.36	.36¾	.35	.38¼	.35	.....	.35¾	.....	.34¾	.35¾	.34¼	.35	33,500
Ben Hur	1	.....	.07¾	.07¾	.08¾	.....	.....	.04¾	.06¼	.....	.08	.07¾	.09	6,000
Black Bell	1	.13¾	.14	.13¾	.....	.14¼	.14¾	.14¾	.15¾	.15¼	.16	.15	.152	7,000
Blue Bell	1	.13¼	.....	.13¼	.14¾	.13¾	.14¼	.13¾	.14	.14	.15	.14¼	.14¾	7,500
Bob Lee	1	.06¾	.06¾	.06¾	.07	.06¾	.06¾	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾	14,000
Buckhorn	1	.07¼	.07¾	.07¾	.07¾	.07¾	.07¾	.07¼	.07¾	.07¼	.07¾	.07	.07¾	14,000
Cadillac	1	.02¾	.02¾	.02¾	.022	.02	.02¾	.02	.02¼	.02	.02¼	.02	.02¾	32,000
Central C'n	1	.06¼	.07	.06	.07¼	.06	.07	.06	.07¼	.06¼	.07	.06	.....	1,000
Champion	1	.....	.....	.07¾	.08	.07¾	.08	.07¾	.08	.07¾	.07¾	.07¾	.08	13,850
Chicolo	1	.04	.04¼	.04¼	.042	.04	.04¼	.04	.04¼	.04¼	.04¾	.04¼	.04¼	26,000
C.K.&N	1	.....	.027	.02¾	.02¾	.02¼	.027	.02¼	.02¾	.02¾	.02¾	.02¼	.02¾	8,000
C.C.Col'bia	1	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¼	.10¾	.10¼	.10¾	84 000
C.O G.Ext.	1	.....	.11¾	.11	.11¾	.....	.....	.....	.11¾	.....	.11¾	.10¾	.11¼	2,000
C.C. & Man.	1	.15¼	.15¾	.15¼	.15¾	.....	.15	.14¼	.14¾	.14¼	.14¾	.13¾	.14¾	24,000
Copper Mt.	1	.06¾	.07	.06¾	.067	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	16,000
Crcede&CC	1	.....	.....	.12¼	.....	.12¼	.....	.12¼	.....	.12¼	.....	.12	.....	1,100
C. C. Con	1	.20¼	.23¼	.20¾	.21	.212	.21¼	.21¾	.22	.22¾	.23	.23¾	.23	251,700
Dante	1	.16¾	.167	.16	.16¾	.15¾	.16¼	.15¾	.15¾	.15¼	.15¾	.15¾	.15¾	47,800
Des Moines	1	.06¼	.06¼	.06¾	.06¾	.06¾	.06¾	.06¼	.07	.06¼	.07	.06¾	.06¾	7,000
Eclipse	1	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾	.09¼	.09¼	.09	.09¼	.09¼	.09¾	69,000
ElktonCon	1	1.20¾	1.21¾	1.20	1.20¾	.....	1.20¾	1.20	1.21	1 20	1.21	1.20¾	1.21	5,450
El Paso G.	1	.35	.35¼	.35¼	.....	.36	.38	.39	.....	.39¾	.40	.39½	40	51,600
Enterprise	1	.24¾	.25	.24¾	.25	.23	.23¾	.23¾	.24¼	.....	.24¾	.....	.26	10,500
F.Rawlings	1	.29	.302	.29	.30¾	.29	.31	.29	.30¾	.29	.30¾	.30	.....	5,000
Favorite	1	.06	.062	.06¼	.06¼	.057	.06¾	.06	.06¾	.....	.06¼	.05¾	.05¾	17,500
Findley	1	.14¾	.142	.14¼	.14¾	.14¼	.14¾	.14	.14¾	.14	.13¾	.14	.....	19,000
Garf. Con	1	.182	.18¾	.18¾	.18¾	.18¼	.19	.18¾	.16	.18¾	.19	.19¾	.18	54,000
Golden Fl	1	.26	.31	.28	.31	.28	.....	.27¾	.31	.27¾	.31	.27¾	.31	.....
Gold Hill	1	.02¾	.03	.03¾	.....	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾	.03¾	.03¾	40,500
Gold.Sov'n.	1	.12¾	.12¾	.12¾	.13	.12¼	.12¾	.12¾	.12¾	.12¾	.13	.13¼	.13¾	94,000
Hayden	1	.022	.02¾	.....	.02¾	.02¼	.02¾	.02¼	.02¾	.02¼	.02¾	.....	.02¾	11,000
Ida May	1	.....	.29¾	.29	.29¼	.29	.29¼	.29	.30	.....	.30¼	.29¾	.29¾	11,000
Independence	1	.67¼	.68	.65	.65¾	.63¾	.65	.61	.63¾	.62¼	.64	.65	.66	6,000
Ing. Con	⅛	.18¾	.19	.19¼	.19¾	.18¾	.18¾	.19	.19¼	.18¾	.19	.18¾	.19¼	72,500
Isabella	1	1.27¾	1.28	1.28	1.28¾	1.27¾	1.27¾	1.27¼	1.27¾	1 28¼	1.30	1.29¾	1 30¼	25,400
Jack Pot	1	.6 3¼	.61	.61¾	.62	.....	.61	.60¾	.61¾	.60	.62	.60	.....	11,200
Josephine	1	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.....	.03¾	.03¼	.03¾	.....	.03¾	24,100
Key West	1	.05¼	.05¾	.05¼	.05¾	.05¾	.05¾	.....	.05¾	.....	.05¾	.05	.05¾	50,000
Lexington	1	.22¼	.22¾	.21¾	.22	.21¼	.21¾	.20	.20¾	.20½	.20¾	.20¼	.20¾	63,500
Magnet R	1	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	32,000
Margaret	1	.03¾	.04	.03¾	.04	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	7,000
Margery	1	.047	.05¼	.04¾	.05¾	.04¼	.03¾	.04¼	.03¾	.04	.05	.04¼	.05	11,000
Matoa	1	.....	.26	.24	.....	.....	.....	.....	.....	.....	.24	.....	.....	15,200
Midway	1	.077	.08	.07¼	.08	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	60,000
M. J. T	1	.04¾	.04½	.04¼	.04½	.04¼	.04¾	.04¼	.04½	.04¼	.04¾	.04¼	.04½	17,000
Mobile	1	.03¾	.04	.03¾	.037	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾	.03¾	.03¾	9,000
Moll.Dwyer	1	.03½	.03¾	.03½	.03¾	.03¼	.03¾	.03¼	.03¾	.03½	.03¾	.03¼	.03¾	35,500
Mollie Gib.	1	.25	.25½	.24¾	.....	.24¾	.....	.24¾	.....	.....	.....	.23¾	.26	1,400
Monarch	1	.14¼	.14¾	.14¾	.14¾	.....	.14	.14¾	.14¾	.15¼	.15¾	.15	.15¾	31,000
Montreal	1	.07¾	.07¾	.....	.07¾	.07	.08	.....	.....	.....	.....	.....	.08	2,000
Moon-A'c'r	1	.64¾	.64¾	.....	.65	.63¾	.63	.62¼	.63	.63¼	.....	.63¼	.65	4,500
Morning S	1	.05	.05¼	.04¾	.05¼	.04¾	.05	.04¾	.05	.04¼	.04¾	.04¾	.04¾	33,000
Mtn Beauty	1	.10¾	.11	.10¾	.10¾	.10¾	.10¾	.10¾	.10¾	.10¼	.10¾	.10¾	.11	18,000
Mt Rosa	1	.80	.....	.83¾	.....	.86¼	.....	.96	1.00	.93¾	.95	.90	.95	3,500
National	1	.12¾	.13¾	.12¾	.13¾	.11¾	.13¼	.11¾	.12	.11¾	.11¾	.11¾	.11¾	56,000
Nellie V	1	.11	.11¼	.11¼	.....	.11¼	.11¾	.11¾	.11¾	.10½	.10¾	.10¼	.11	39,000
New Haven	1	.09¾	.09¾	.09	.09¾	.09½	.09¾	.09¾	.08¾	.09	.08¾	.09	.09	20,400
OliveB'nch.	1	.09	.09¼	.09	.09¼	.09½	.09¾	.09¾	.06¾	.09	.....	.08¾	.09	28,000
Oriole	1	.05¾	.05¾	.0 ¾	.05¾	.05¾	.05¾	.05¾	.05¾	.0 ¾	.05¼	.05¼	.05¾	13,000
Orphan	1	.23	.23¾	.23¼	.23¾	.23¾	.23¾	.....	.23¾	.22¾	.23¼	.22¾	.23¼	17,000
Pelican	1	.03	.03¼	.03	.03¼	.03¼	.03¾	.03¼	.03¾	.03	.03¼	.03	.03¼	8,000
Pharmacist	1	.16¾	.17	.15¾	.16¾	.16¼	.16¾	.15¾	.16¼	.16¼	.16¾	.15	.15¾	272,000
Pilgrim	1	.14¾	.15	.15¼	.15¾	.14¾	.14¾	.15	.15¼	.14¾	.14¾	.14¾	.14¾	112,500
Pinnacle	1	.23¾	.....	.24¼	.25¼	.24	.24¼	.23¾	.24	.22	.23¼	.20	.....	35,000
Portland	1	2.37	2.39	.....	2.40	2.37	2.37¾	2.38	2.40	2.38	2.40	2.38	2.40	2,600
Prince Alb.	1	.06¾	.06¼	.06¼	.06¾	.06¾	.06¼	.06¼	.06¾	.06	.06¾	.06¼	.06¾	55,500
Princess	1	.06¼	.06¾	.06¼	.06¾	.06¾	.06¾	.06¼	.06¾	.06	.06¾	.06¼	.06¾	26,000
Progress	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pythias	1	.07¼	.08	.07¼	.....	.07¾	.08¼	.07¼	.07¾	.07¼	.07¾	.07	.072	9,000
Raven	1	.83	.83¼	.83¼	.83¼	.83	.83¾	.83	.83¼	.82¼	.82¾	.....	.83¼	18,300
Republic	1	.07	.07¼	.07¼	.07¾	.06	.07¾	.....	.07¾	.....	.07	.....	.07	5,000
Rob't Burns	1	.05¾	.06¼	.06¼	.06¼	.06¼	.06¼	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾	51,000
Rose Maud.	1	.12¾	.13¾	.12¾	.14¾	.12¾	.....	.12¾	.13	.12¾	.13	.12¾	.....	41,000
Rose Nicol	1	.13¾	.14	.14	.14¼	.13¾	.14	.13¼	.13¾	.13¼	.13¾	.13¾	.14	39,000
Silver Gold.	1	.....	.....	.01¾	.01¾	.01¼	.02	.01¼	.02	.012	.015	.01¼	.01¾	6,000
Specimen	1	.12	.12¾	.11¾	.12	.11¼	.11¾	.....	.11¾	.10¼	.11	.10¾	.11	15,000
Tornado	1	.54¾	.55¼	.54¾	.55	.54¾	.55	.54¾	.55	.54¼	.55¼	.55¼	.55¾	37,300
Touraine	1	.06	.06¼	.06¾	.07	.05¾	.06¼	.06	.....	.06¾	.07	.06¾	.07	10,000
Trachyte	1	.08¼	.08¾	.08	.08¼	.07¾	.08	.07¼	.....	.07¼	.07¾	.07¾	.08	32,150
Uncle Sam	1	.....	.06	.05¾	.06	.06	.06¼	.05¾	.....	.....	.....	.05¾	.06	12,000
Union	1	.48¼	.48¾	.48¼	.49	.48¾	.48¾	.48¼	.49	.48¾	.49¼	.48¾	.49¾	31,610
Vindicator	1	1.55¾	1 59	1.56	1 60	1.54½	1.59	1.55	1.58	.....	1.58	.....	1 58	1,900
Work	1	.34¾	.35	.35½	.35¾	.34¾	.36	.36¼	.36¾	.35¾	.37	.36¾	.37	61,400
Wenobia	1	.....	.19¼	.16¾	.17	.15	.18	.15	.16¼	.16	.16¾	.16¼	.17¼	10,500

‡ Colorad› Springs Mining Stock Exchange. Total sales, 2,903 361 shares.

DENVER, COLO.‡

NAME OF COMPANY	Par val.	Feb. 24 B.	Feb. 24 A.	Feb. 26 B.	Feb. 26 A.	Feb. 27. B.	Feb. 27. A.	Feb. 28. B.	Feb. 28. A.	Mar. 1. B.	Mar. 1. A.	Mar. 2 B.	Mar. 2 A.	Sales.
Anaconda	5	.....	.....	.42	.....	.....	.....	.41	.....	.....	.....	.....	.....	500
Arg. J	1	.22	.23	.20	.23¾	.19¾	.21¾	.....	.21	.18	.21	.....	.20	1,000
C. K. & N.	1	.02¾	.03	.02¾	.03	.02¾	.03	.....	.....	.02¾	.02¾	.02¾	.02¾	5,000
Dictator	1	.03¾	.04	.04	.04¼	.04	.04¼	.03¾	.04¼	.03¾	.04¼	.....	.....	6,000
Favorite	1	.....	.....	.....	.....	.05¼	.06¼	.06	.06¼	.05¾	.06¼	.....	.....	1,000
Gold Hill	1	.03	.03¼	.03¾	.....	.03¼	.03¾	.03¼	.03¼	.03¼	.03¾	.03¼	.03¾	2,000
New Haven	1	.09¾	.09¾	.....	.....	.09¼	.09¾	.09¼	.09¾	.08¼	.....	.08¾	.....	.....
New Zeal'd	1	.41	.50	.41	.50	.40	.....	.40	.....	.41	.....	.41	.50	.....
Pr. Albert	1	.06¼	.06¾	.....	.....	.....	.....	.06¾	.06¼	.....	.....	.....	.....	.....
Puritan	1	.01¾	.02	.01¾	.01¾	.01¾	.....	.....	.01¾	.02	.01¾	.....	.01¾	15,000
Sacram'nto	1	.13	.....	.....	.13¾	.....	.....	.....	.....	.....	.....	.12¾	.13¾	.....
Work	1	.....	.....	.....	.....	.35¾	.36	.36¼	.36¾	.....	.....	.37	.....	3,000

‡ Official Quotations Denver Stock Exchange. Total sales, including above, 333,500 shares.

SPOKANE, WASH.*

Feb. 10.

NAME OF COMPANY.	Par val.	Prices. B.	Prices. A.	Sales.	NAME OF COMPANY.	Par val.	Prices. B.	Prices. A.	Sales
Butte & Boston	....	.03¾	.04¾	.....	Morning Glory	0.10	.03½	.05	1,000
Conjecture	....	.01¾	.....	5,000	Morrison	....	.04	.05	.....
Crystal	....	.03¼	.06¾	.....	Mountain Lion	1.00	.....	.....	.....
Deer Trail No. 2	$1	.10¾	.14¼	.....	Noble Five	$1	.....	.....	.....
Evening Star	1	.07¼	.09	.....	Palmer Mountain	....	.....	.....	.....
Gem	....	.....	.....	.....	Pearl	1	.....	.....	.....
Giant	....	.....	.....	.....	Princess Maude	0.10	.06	.08	.....
Gold Ledge	....	.05¾	.07¼	.....	Quilp	....	.19¾	.24¾	.....
Golden Harvest	1	.01¾	.02¾	2,000	Rambler Cariboo	0.25	.43	.53¾	.....
Gopher	....	.....	.....	.....	Republic (Con)	1	.....	.....	.....
Insurgent	0.10	.02¾	.....	.....	Reservation	....	.07	.10¾	.....
Iron Mask	....	.....	.....	.....	Sullivan	....	.07¾	.10	.....
Jim Blaine	1	.25	.....	.....	Tom Thumb	1	.14	.18¾	.....
Lone Pine-Surp. Con	1	.13¾	.15	.....	War Cloud	....	.....	.....	.....
Mammoth	....	.00¼	.00¾	.....	Winnipeg	....	.....	.....	.....

*Official quotations Spokane Stock Exchange. Total sales, 4,000.

MEXICO.

Feb. 24.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g.	Prices. Cl'g.
Chihuahua:				
Gloria	1,500	.....	$50	$50
Durango:				
Barradon y Cab	2,400	.....	40	40
Candelaria de Pan.	1,200	.....	20	20
Capusaya	2,400	.....	30	30
Penoles	2,500	80.00	2,000	2,000
Restauradora	10,000	.....	20	20
Rosario y Anexas	4,800	.....	10	10
Guanajuato:				
Angustias	2,400	5.00	290	285
Cinco Senores y An	2,000	15.00	390	870
El Oro	500	.....	80	80
do. pref	2,000	.....	30	30
Guadalupe Hacie'a	10,000	2.00	25	28
Trinidad, aviador	2,000	.....	20	15
do. aviada	400	.....	20	15
Zona Minera de Paz	2,400	.....	20	15
Hidalgo:				
Amistad yConcord	9,600	1.47	29	27
Arevalo	720	.....	200	200
Bartolome de Med.	2,000	2.00	65	70
Carmen	1,100	7.75	350	300
Luz de Maravillas	900	.....	120	100
Pabellon	800	27.89	30	20

NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Hidalgo:				
Real del Monte	2,354	10.00	550	500
San Francisco Ho	6,000	3.00	200	195
San Rafael y An	1,300	12.00	93	87½
do. aviado	1,300	6.00	330	280
do. del Oro	3,000	5.00	20	20
Soledad	960	5.00	330	280
Sorpresa	960	7.80	240	300
Union Hacienda	2,000	5.00	350	340
Mexico:				
Coronas	500	.....	75	75
Esperanza y An	3,000	10.00	1,500	1,500
Michoacan				
Luz de Borda ava	4,000	.....	22	18
Pueblo:				
Tlauxingo	2,400	.....	27	28
S. Luis Potosi:				
Concep. y An	2,400	.....	250	280
Sta.MariadelaPaz	2,400	10.00	720	840
Zacatecas:				
Asturiana y An	2,500	10.00	180	225
Cabezon	2,400	.....	15	15
C'delar. de Pinos	2,500	.....	25½	225
Palma de Somb	2,400	.....	100	80

PARIS.

Feb. 15.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Aciaries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	1,906.00	1,900.00
" " Firminy	"	" "	3,000,000	500	125.00	3,820.00	3,700.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	513 00	510 00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,555.00	4,530.00
" " la Marine	France	Steel mfrs	20,000,000	500	0.00	1,900.00	1,585.00
Anzin	"	Coal	.....	.....	220.00	6,880.00	6,900.00
Boleo	Lower Cal	Copper	.....	500	1.67	2,995.00	2,990.00
Briansk	Russia	Coal & Iron	.....	500	.....	1,287.50	1,280.00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	35.50	34.50
Courrieres	France	Coal	600,000	300	70.00	2,950.0	2,975.00
Dombrowa	Russia	Coal	.....	500	12.50	1,120.00	1,120.00
Donetz	"	Steel	.....	.....	.....	1,290.00	1,285 00
Dynamite Centrale	France	Explosives	.....	500	30.00	478.00	470.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,319 00	1,330 00
Fraser River	Brit. Col'mb	Gold	250,000	25	.....	7.50	7.25
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	73.00	91.00
Laurium	Greece	Zinc & lead	16,800,000	500	90.00	593.0	595.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	1,375.00	1,400.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	30.00	532 0.	520.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,220 00	1,220.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	792.00	79 50
Napthe, Le	"	"	.....	.....	.....	1,300.00	1,300.00
Napthe Nobel parts	"	"	.....	.....	.....	691.00	707.50
Nickel	N.Caled'nia	Nickel	10,000,000	250	10.00	13,762.00	14,150.00
Penarroya	Spain	Coal, etc	.....	500	65.00	2,885 00	2,940.00
Rebecca	Colo'do,U.S.	Gold	5,000,000	25	.....	4 25	4.50
Salines de l'Est	France	Salt	.....	500	6.50	220.00	220.00
Salines du Midi	France	" etc	.....	500	25.00	995 00	990.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	26.00	820 00	840.00

LONDON.

Feb. 23.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
				£ s. d.	s.d.	£ s. d.	£ s. d
Alaska Goldfields	Alaska	£300,000	1	0 0	2 1 Mar., 1899	18 9	16 3
Alaska-Mexican, g	"	200,000	1	0 0	0 4.8 Jan., 1900	15 0	17 6
Alaska-Treadwell, g	"	1,000,000	5	0 0	1 6 " "	4 15 0	5 0 0
Anaconda, c., s	Montana	6,000,000	5	0 0	8 2 Nov., 1899	9 5 0	9 7 6
Chiapas, g., s., c	Mexico	282,500	1	0 0	.....	5 0	7 6
De Lamar, g., s	Idaho	400,000	1	0 0	.....	3 6	4 6
Elkhorn Priority (New), s	Colorado	87,500	1	0 0	2 0 June, 1898	1 3	8 9
Golden Gate, g	California	80,000	1	0 0	.....	1 0	2 0
Grand Central, g., s	Mexico	300,000	1	0 0	2 0 Jan., 1900	1 5 0	1 7 6
Hall Mines, c., s	British Col.	250,000	1	0 0	1 0 May, 1899	1 3	1 9
Le Roi, g	" "	1,000,000	5	0 0	5 0 Nov., 1899	5 0 0	5 12 6
Lillie, g	Colorado	250,000	1	0 0	2½ Feb., 1900	15 0	1 0 0
Montana, g., s	Montana	660,000	1	0 0	6 Apr., 1899	4 0	4 6
Newfoundland, c	Newfoundland	250,000	1	0 0	.....	5 0	10 0
Palmarejo & Mexican, g., s	Mexico	800,000	1	0 0	.....	1 0	2 0
Stratton's Independence	Colorado	1,100,000	1	0 0	2 0 Feb., 1900	2 18 9	3 1 3
Copiapo, c	Chile	240,000	2	0 0	4 0 Dec., 1899	3 17 6	4 2 6
Frontino & Bolivia, g	Colombia	140,000	1	0 0	1 6 Oct., 1899	1 1 3	1 18 9
St. John del Rey, g	Brasil	600,000	1	0 0	1 0 Dec., 1899	1 6 3	1 8 9
UtahCon.,g(High'ndBoy)	Utah	800,000	1	0 0	rts. Mar., 1898	6 0 0	6 10 0
Velvet, g	BritishCol'mbia	100,000	1	0 0	.....	1 0	1 5 0
Ymir, g	"	300,000	1	0 0	1 0 Nov., 1899	1 8 9	1 16 3
British Am. Corp	"	1,500,000	1	0 0	rts. Dec., 1899	18 9	19 3
Linares, l	Spain	45,000	8	0 0	12 6 Oct., 1899	8 10 0	9 10 0
Mason & Barry, c., sul	Portugal	420,000	2	0 0	5 0 May, 1899	4 10 0	4 15 0
Rio Tinto, c	Spain	1,625,000	5	0 0	1 15 Nov., 1899	49 15 0	50 0 0
" pref	"	1,625,000	5	0 0	2 6 "	6 2 6	6 5 0
Tharsis, c	"	1,250,000	2	0 0	11 0 May, 1898	9 17 6	10 2 6
Associated Gold Mines	W. Australia	500,000	1	0 0	1 6 Jan., 1900	1 3	1 5 0
Broken Hill Prop., s	N.S. Wales	384,000	8	0 0	1 0 Jan., 1900	2 3 9	2 6 3
Great Boulder Prop	W. Australia	1,750,000	2	0 0	6 Dec., 1899	1 16 6	1 17 6
Hannan's Brownhill, g	" "	110,000	1	0 0	5 6 Jan., 1900	10 16 3	10 18 9
Ivanhoe Gold Corp	" "	1,000,000	5	0 0	5 0 Jan., 1900	15 2 6	15 5 0
Kalgurlie, g	" "	120,000	1	0 0	rts. Feb., 1899	9 1 3	9 3 9
Lake View Consols, g	" "	250,000	1	0 0	10 0 Feb., 1900	14 15 0	14 17 6
Mt. Lyell M. & R., l., c	Tasmania	975,000	3	0 0	5 0 Jan., 1900	9 5 0	9 10 0
Mt. Morgan, g	Queensland	1,000,000	1	0 0	7 Feb., 1900	5 0 0	5 2 6
Waihi, g	New Zealand	320,000	1	0 0	2 6 Mar., 1900	9 15 0	10 0 0
Champion Reef, g	Colar Fields	220,000	10	0 0	5 0 Jan., 1900	8 13 9	8 16 3
Mysore Gold, g	" "	250,000	10	0 0	4 6 Nov., 1899	1 3 6	1 3 9
Nundydrog, g	" "	242,000	1	0 0	2 0 "	3 6 3	3 8 9
Ooregam, g	" "	145,000	1	0 0	1 6 Dec., 1899	3 8 9	3 11 3
" pref. g	" "	120,000	1	0 0	1 6 " 1899	4 8 9	4 11 3
British S. Af., chartered	So. Africa	5,000,000	1	0 0	rts. May, 1899	3 13 9	3 16 3
Cape Copper, c	"	600,000	1	0 0	6 6 Jan., 1900	5 2 6	5 5 0
" pref	"	150,000	2	0 0	6 6 " 1900	4 1 0	5 0 0
City & Suburban (New), g	Transvaal	1,360,000	4	0 0	8 0 Aug , 1899	4 15 0	5 5 0

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Authorized Capital Stock.	Shares Issu'd No.	Shares Issu'd Par Val	Dividends Paid, 1900.	Dividends Total to Date.	Latest Date.	Latest Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1				
2	Etna Con., q.	Cal.	500,000	100,000	5	$60,000	$210,000	Jan. 1900	.15
3	Alabama Coal & Iron, pf	Ala.	2,500,000	25,000	100	43,750	43,750	Feb. 1900	1.75
4	Alamo, g.	Colo.	1,000,000	1,000,000	1				
5	Alaska-Mexican, g.	Alask	1,000,000	180,000	1	18,000	447,031	Jan. 1900	.10
6	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	75,000	4,295,000	Jan. 1900	.37½
7	Alice, g. s.	Colo.	500,000	450,000	1		31,500	Dec. 1899	.07
8	Alliance, g.	Mont.	10,000,000	400,000	25		1,075,000	April. 1898	.05
9	Amalgamated, c.	Mont.	75,000,000	750,000	100	1,500,000	3,000,000	Jan. 1900	2.00
10	Amazon, g.	Colo.	600,000	600,000	1	12,000	32,000	Jan. 1900	.02
11	American Coal.	Md.	1,500,000	60,000	25	75,000	802,500	Mar. 1900	1.25
12	American Gold, g. s. c. l.	Colo.	3,000,000	300,000	10		446,000	Dec. 1899	.04
13	Amer. Sm. & Ref., pref.	U. S.	32,500,000	32,500	100	568,750	1,137,500	Jan. 1900	1.75
14	Am. Steel & Wire, pf.	U. S.	40,000,000	400,000	100	700,000	3,500,000	Jan. 1900	1.75
15	Am. Steel & Wire, com.	U. S.	50,000,000	500,000	100	875,000	875,000	April. 1900	1.75
16	American Zinc	Kas.	500,000	5,000	100	10,000	30,000	Feb. 1900	1.00
17	Am. Zinc, Lead & Sm.	Mo.	2,500,000	60,000	25	60,000	180,000	Jan. 9001	1.00
18	Anaconda Copper	Mont.	30,000,000	1,200,000	25		12,150,000	Nov. 1899	2.00
19	Anchoria-Leland, g.	Colo.	600,000	600,000	1		198,000	April. 1899	.03
20	Anglo-Mexican, g.	Mex.	2,001,625	400,230	5		1,728,993	Dec. 1898	.24
21	Apollo Con., g.	Alask	1,000,000	100,000	10	70,000	210,000	Jan. 1900	.07
22	Appie Ellen, g.	Colo.	600,000	600,000	1		25,000	Aug. 1898	.01
23	April Fool.	Nev.	500,000	500,000	1		16,000	Oct. 1899	.01
24	Argentum-Juniata, g.	Colo.	1,300,000	650,000	2		156,000	Oct. 1895	.03
25	Argonaut	Cal.	2,000,000	200,000	10	40,000	460,000	Feb. 1900	.10
26	Associated, g.	Colo.	1,250,000	1,250,000	1		84,000	Feb. 1899	.01
27	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	860,000	Feb. 1900	2.00
28	Aurora, l.	Mich.	2,500,000	100,000	25		890,000	June. 1899	.50
29	Bald Butte	Mont.	250,000	250,000	1		769,648	Dec. 1899	.03
30	Bankers, g.	Colo.	1,250,000	1,250,000	1				
31	Bankok Cora Belle, s.	Colo.	600,000	600,000	1		106,000	July. 1896	.01
32	Battle Mtn. Con., g.	Colo.	2,500,000	2,500,000	1				
33	Big Four, g.	Colo.	1,000,000	1,000,000	1				
34	Big Seven, g.	Cal.	100,000	100,000	1		6,000	April 1898	.03
35	Big Six, g. s.	Colo.	500,000	500,000	1		15,000	May. 1898	.00½
36	Boston-Aurora, pref.	Mo.	800,000	32,000	25	10,560	39,600	Feb. 1900	.17
37	Boston & California.	Cal.	600,000	600,000	1		72,000	June. 1899	.06
38	Boston & Colo. Smelting	Colo.	750,000	15,000	50	11,250	281,250	Jan. 1900	.75
39	Boston Duenweg, z.	Mo.	1,000,000	40,000	10	8,000	40,000	Feb. 1900	.10
40	Boston Get There, z.	Mo.	250,000	22,500	10	4,500	15,750	Feb. 1900	.10
41	Boston-Little Circle, z.	Mo-K.	1,000,000	100,000	10	20,000	100,000	Feb. 1900	.10
42	Boston & Mont. Con.	Mont.	3,750,000	150,000	25	1,200,000	15,700,000	Feb. 1900	8.00
43	Boston Providence, z.	Mo.	150,000	15,000	10	1,500	9,000	Feb. 1900	.05
44	Boston, q.	Cal.	1,000,000	100,000	10	10,000	20,000	Jan. 1900	.10
45	Boston Sunflower, z.	Mo.	150,000	15,000	10		4,500	Oct. 1899	.30
46	Breece, i.	Colo.	5,000,000	200,000	25	10,000	80,000	Feb. 1900	.05
47	Buffalo Hump	Idaho	1,000,000	1,000,000	1	10,000	10,000	Feb. 1900	.01
48	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	20,000	2,458,400	Feb. 1900	.10
49	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	42,000	843,000	Feb. 1900	.07
50	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25		66,850,000	Dec. 1899	20.00
51	Cambria Steel.	Pa.	16,000,000	320,000	50	160,000	1,280,000	Feb. 1900	.50
52	Cariboo-McKinney, g.	B.Col	800,000	800,000	1		311,965	June. 1899	.01½
53	Centen'l-Eureka, g. s. l. c.	Utah.	5,000,000	100,000	25		2,150,000	Aug. 1899	.50
54	Central Lead, l.	Mo.	1,000,000	10,000	100	10,000	152,000	Feb. 1900	.50
55	Champion, g. s.	Cal.	340,000	34,000	10		321,700	Nov. 1899	.25
56	Charleston, p. r.	S. C.	1,000,000	10,000	100		200,000	June. 1899	2.00
57	Colo. Fuel and Iron.	Colo.	23,000,000	130,000	100		137,500	Feb. 1893	1.25
58	Colo. Fuel and Iron, pf.	Colo.	2,000,000	200,000	100	160,000	1,625,000	Feb. 1900	8.00
59	Colonial, l.	Mo.	1,000,000	1,000,000	1		10,000	Aug. 1899	.01
60	Colorado Smelting	Mont.	1,000,000	100,000	10		1,945,000	Jan. 1899	1.00
61	Commodore.	Colo.	1,200,000	1,200,000	1		432,000	Jan. 1899	.04
62	Commonwealth, z., pref.	Mo.	500,000	100,000	5	10,000	30,000	Feb. 1300	.05
63	Consolidated Gold Mines	Colo.	1,000,000	1 000,000	1	10,000	20,000	Jan. 1900	.01
64	Consolidation Coal	Md.	10,250,000	102,500	100	205,000	5,921,650	Feb. 1900	2.00
65	Con, Tiger & Poorman.	Idaho	1,000,000	1,000,000	1		20,000	Dec. 1898	.02
66	Cons. Zinc & Lead, pf.	Mo.	400,000	400,000	1	8,000	8,000	Jan. 1900	.20
67	Continental, z.	Mo.	1,500,000	150,000	10				
68	Cœsus, g.	Cal.	1,000,000	190,000	5		49,000	Dec. 1899	.10
69	Cœsus, g.	Colo.	2,000,000	2,000,000	1		233,000	June. 1898	.01
70	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10		242,760	May. 1899	.02
71	Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1		87,500	Mar. 1896	.00½
72	Daly	Utah.	3,000,000	150,000	20		2,925,000	Mar. 1897	.25
73	Daly West.	Utah.	3,000,000	150,000	20	75,000	195,000	Feb. 1900	.25
74	Damon, g.	Colo.	2,000,000	2,000,000	1				
75	Deadwood-Terra, g.	S. D.	5,000,000	200,000	25		1,350,000	May. 1898	.15
76	Deer Trail Con.	Wash	3,000,000	3,000,000	1		55,000	Dec. 1899	.00½
77	De Lamar, g. s.	Idaho	2,000,000	400,000	5		2,346,000	May. 1899	.12
78	Della S., g.	Colo.	1,000,000	1,000,000	1		60,000	Jan. 1897	.01
79	Delta, l. z.	Mo.	100,000	100,000	1	1,790	5,890	Feb. 1900	.01
80	Doe Run, l.	Mo.	500,000	5,000	100	5,000	95,000	Feb. 1900	.50
81	Dutch, g.	Cal.	1,500,000	150,000	10		39,000	Feb. 1898	.04½
82	Eldorado, g.	Cal.	1,000,000	100,000	10		10,000	July. 1899	.10
83	Elkhorn, New, s. l.	Colo.	437,500	87,500	5		1,325,000	June. 1898	.48
84	Elkton Con., g.	Colo.	1,250,000	1,125,000	1		720,711	Dec. 1899	.03
85	El Paso, g. s.	Colo.	650,000	650,000	1		12,393	Jan. 1898	.01
86	Empire State-Idaho.	Idaho	1,000,000	98,514	10	59,108	377,146	Feb. 1900	.30
87	Enterprise, s. l.	Colo.	500,000	500,000	1		900,000	Sept. 1898	.05
88	Fanny Rawlings, g. s.	Colo.	1,000,000	1,000,000	1		20,000	Aug. 1899	.01
89	Federal Steel, pf.	U. S.	100000,000	532,610	100	1,597,830	4,793,490	Jan. 1900	3.00
90	Federal Steel, com.	U. S.	100000,000	464,843	100	1,743,161	1,743,161	Mar. 1900	2.50
91	Fern, g.	B.Col	200,000	200,000	1		10,000	Jan. 1898	.05
92	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1		5,000	Mar. 1899	.00½
93	Findley, g.	Colo.	1,250,000	1,250,000	1				
94	Florence, s.	Mont.	2,500,000	500,000	5		187,530	Dec. 1899	.05
95	Frisco Con., l. s.	Idaho	2,500,000	500,000	5		920,000	Nov. 1899	.25
96	Galena, s. l. g.	Utah.	1,000,000	100,000	10		71,000	Sept. 1897	.05
97	Garfield Con., g.	Colo.	1,200,000	1,200,000	1		34,000	May. 1899	.01
98	Geyser-Marion, g.	Utah.	1,500,000	300,000	5		96,000	Sept. 1898	.02
99	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1	40,000	400,000	Feb. 1900	.02
100	Gold & Globe, g.	Colo.	750,000	750,000	1		51,625	July. 1898	.00½
101	Gold King, g.	Colo.	1,000,000	1,000,000	1	30,000	120,000	Jan. 1900	.03
102	Gold Sovereign, g.	Colo.	3,000,000	3,000,000	1				
103	Golden Cycle, g.	Colo.	1,000,000	200,000	5	20,000	278,500	Feb. 1900	.05
104	Golden Eagle, g.	Colo.	500,000	500,000	1		20,000	Nov. 1900	.01
105	Golden Fleece, g. s.	Colo.	600,000	600,000	1		569,480	Feb. 1897	.01
106	Golden Reward, g.	S. D.	1,000,000	100,000	10		155,000	Feb. 1898	.15
107	Golden Star, g.	Ont.	1,000,000	1,000,000	1		41,000	July. 1899	.01
108	Gould, g.	Colo.	1,000,000	1,000,000	1				
109	Grafton, g.	Colo.	1,000,000	1,000,000	1		10,000	Oct. 1899	.01
110	Grand Central, g.	Utah.	250,000	250,000	1		666,250	Sept. 1899	.24
111	Grand Gulch.	Utah.	250,000	240,000	1	4,800	4,800	Feb. 1900	.01
112	Grass Valley Expl.	Cal.	100,000	30,000	2	15,000	45,000	Feb. 1900	.25
113	Gwin, g.	Cal.	1,000,000	20,000	50	10,000	111,500	Feb. 1900	.25
114	Hall Mines, Ltd.	B.Col	1,500,000	250,000	5		120,000	May. 1899	.24
115	Hecla Con.	Mont	1,500,000	30,000	50		2,190,000	Dec. 1898	.50
116	Hidden Treasure, g.	Cal.	500,000	360,000	1		3,600	July. 1899	.01
117	Holy Terror, g.	S. D.	500,000	500,000	1		167,000	Dec. 1899	.01
118	Homestake, g.	S. D.	21,000,000	210,000	100	210,000	8,353,750	Feb. 1900	.50
119	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25		5,250,000	Mar. 1899	.05
120	Ida May, g.	Colo.	500,000	500,000	1				
121	Idaho, s. l.	B.Col	500,000	500,000	1		292,000	Jan. 1899	.05½
122	Independence Town & M	Colo.	$1,225,000	1,225,000	$1				
123	International, z.	Mo.	1,000,000	1,000,000	1	$10,000	$10,000	Feb. 1900	.01
124	Iowa, g.	Colo.	1,000,000	1,000,000	1	7,500	97,500	Jan. 1900	.00¾
125	Iron Mountain, g. s. l. l.	Mont.	5,000,000	500,000	10		507,500	April. 1898	.02
126	Iron Silver, s. l.	Colo.	10,000,000	500,000	20		2,500,000	April. 1899	.20
127	Isabella, g.	Colo.	2,250,000	2,250,000	1		540,000	Dec. 1899	.03
128	Jack Pot, g.	Colo.	1,250,000	1,250,000	1		150,000	Dec. 1899	.06
129	Jamison.	Cal.	3,900,000	390,000	10		50,700	April. 1899	.10
130	Keystone, g.	Colo.	1,500,000	1,500,000	1				
131	Klondike Bonanza, Ltd.	Klond	750,000	52,750	5		12,000	Aug. 1899	.24
132	Lake Superior Iron.	Mich.	2,100,000	84,000	25		2,132,000	Feb. 1899	1.00
133	Last Chance, s. l.	B.Col	500,000	500,000	1		45,000	Apr. 1899	.05
134	Last Dollar, g.	Colo.	1,500,000	1,500,000	1	30,000	60,000	Feb. 1900	.02
135	Le Roi, g.	B.Col	5,000,000	200,000	5		1,305,000	Nov. 1899	1.20
136	Lexington, g.	Colo.	1,500,000	1,500,000	1				
137	Lillie, g.	Colo.	1,250,000	250,000	5	11,250	324,110	Feb. 1900	.05
138	Little Tiger, g.	Cal.	500,000	500,000	1	15,000	47,500	Feb. 1900	.01½
139	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	40,000	1,650,000	Jan. 1900	.10
140	Marion Con.	Colo.	5,000,000	500,000	10		300,000	May. 1899	.01
141	Mary McKinney, g.	Colo.	1,000,000	1,000,000	1	30,000	60,000	Jan. 1900	.03
142	Maryland Coal, pf.	Md.	1,885,005	18,850	100		546,619	Dec. 1899	3.00
143	Matoa, g.	Colo.	1,000,000	1,000,000	1		25,000	Dec. 1898	.02½
144	Mead, g.	Cal.	200,000	200,000	1		160,000	Dec. 1899	.10
145	Mercur, g.	Utah.	5,000,000	200,000	25	50,000	1,416,000	Jan. 1900	.25
146	Minnesota Iron.	Minn.	16,500,000	165,000	100		4,735,000	Oct. 1898	1.50
147	Missouri Zinc Fields, pf.	Mo.	400,000	16,000	25	5,370	26,682	Feb. 1900	.17
148	Modoc, g. s.	Colo.	500,000	500,000	1	10,000	155,000	Feb. 1900	.01
149	Mollie Gibson, s. l.	Colo.	5,000,000	1,000,000	5		4,080,000	Jan. 1895	.05
150	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5		453,700	April. 1899	.12
151	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	80,000	1,440,000	Feb. 1900	1.00
152	Montreal, g.	Colo.	1,000,000	1,000,000	1				
153	Monument, g.	Colo.	300,000	300,000	1		18,124	Nov. 1899	.01
154	Moon-Anchor Con., g.	Colo.	1,750,000	600,000	1		261,000	Nov. 1898	.07½
155	Moose, g.	Colo.	600,000	600,000	1		186,000	Feb. 1896	.01
156	Morning Star Drift, g.	Cal.	240,000	2,400	100		751,890	Oct. 1899	3.00
157	Morse, g.	Colo.	1,250,000	1,250,000	1		213,150	May. 1899	.12
158	Mountain Beauty, g.	Colo.	2,000,000	2,000,000	1				
159	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1		90,000	Dec. 1899	.04
160	Mt. Shasta.	Cal.	100,000	20,000	5		6,000	May. 1899	.30
161	Moulton	Mont.	2,000,000	400,000	5		500,000	Oct. 1893	.05
162	Mountain Copper.	Cal.	6,250,000	250,000	25		1,173,750	Oct. 1899	2.16
163	Napa Con., q.	Cal.	700,000	100,000	7	20,000	1,060,000	Jan. 1900	.20
164	National Lead, com.	U. S.	15,000,000	149,054	100	149,054	1,341,486	Mar. 1900	1.00
165	National Lead, pf.	U. S.	15,000,000	149,040	100	260,820	8,607,060	Mar. 1900	1.75
166	National Salt, pf.	U. S.	5,000,000	24,000	100	42,000	126,000	Jan. 1900	1.75
167	National Steel, pf.	U. S.	27 000,000	270,000	100		1,890,000	Dec. 1899	1.75
168	New Central Coal.	Md.	1,00,000	50,000	20		470,000	April. 1899	.40
169	New Idria, q.	Cal.	500,000	100,000	5	20,000	190,000	Jan. 1900	.20
170	New York Zinc.	Mo.	700,000	28,000	25	14,000	35,000	Feb. 1900	.25
171	N.Y.& Hon Rosario, s.g.	C. A.	1,500,000	150,000	10	30,000	1,190,000	Feb. 1900	.10
172	North Star Mines of N.J.	Cal.	5,000,000	250,000	10		50,000	Nov. 1899	.20
173	Nugget.	Colo.	1,000,000	1,000 000	1		35,000	Aug. 1898	.00½
174	Okanogan, g.	Wash	62,500	1,250,000	05		3,125	Oct. 1899	.00¼
175	Ontario, s. l.	Utah.	15,000,000	150,000	100	45,000	13.617,500	Jan. 1900	.30
176	Ophir, g.	Col	700,000	700,000	1				
177	Orphan Belle, g.	Colo.	1,000,000	1,000,000	1		197,899	Dec. 1899	.09
178	Original Empire, g.	Cal.	5,000,000	50,000	100		500,000	May. 1899	1.00
179	Osceola, c.	Mich.	2,500,000	93,000	25		3,080,500	Dec. 1899	3.00
180	Pacific Coast Borax.	Cal.	2,000,000	20,000	100	100,000	522,500	Dec. 1900	5.00
181	Parrot, c.	Mont.	2,300,000	230,000	10	345,000	3,380,808	Jan. 1900	1.50
182	Pennsylvania Coal.	Pa.	5,000,000	100,000	50		4,050,000	May. 1899	8.00
183	Pennsylvania Con.	Cal.	5,150,000	51,500	100	10,300	146,475	Feb. 1900	.10
184	Pennsylvania Steel, pf.	Pa.	1,500,000	15,000	100	26,250	52,500	Jan. 1900	1.75
185	Petro, g.	Utah.	1,000,000	200,000	5		32,000	Oct. 1899	.02½
186	Pharmacist Con., g.	Colo.	1,500,000	1,500,000	1		84,000	Jan. 1898	.01
187	Pioneer, g.	Cal.	1,000,000	100,000	10		62,500	Mar. 1899	.12½
188	Pittsburg Coal, pf.	Pa.	32,000,000	308,000	100	539,000	539,000	Jan. 1900	1.75
189	Plumas Eureka, g.	Cal.	1,406,250	140,625	10		2,713,169	Oct. 1896	.12
190	Portland, g.	Colo.	3,000,000	3,000,000	1	150,000	2,707,080	Feb. 1900	.02
191	Princess, g.	Colo.	1,000,000	1,000,000	1		40,000	May. 1896	.01
192	Prince Albert, g.	Colo.	3,000,000	3,000,000	1				
193	Queen Bess Propr., s. l.	B.Col	500,000	100,000	5		25,000	July. 1899	.12½
194	Quicksilver, pref.	Cal.	4,300,000	43,000	100		1,845,411	May. 1899	.50
195	Quincy, c.	Mich.	2,500,000	100,000	25	500,000	11,570,000	Feb. 1900	5.00
196	Rambler—Cariboo, s. l.	B.Col	1,000,000	1,000,000	1		60,000	Dec. 1899	.01
197	Raven, g.	Colo.	1,500,000	1,000,000	1	20,000	89,500	Feb. 1900	.01
198	Reco, s. l.	B.Col	1,000,000	1,000,000	1		297,500	Jan. 1898	.10
199	Republic Con., g.	Wash	3,500,000	3,500,000	1	70,000	347,500	Feb. 1900	.01
200	Republic Iron & Steel, pf	U. S.	25,000,000	212,570	100		843,995	Dec. 1899	1.75
201	Reward, g.	Cal.	1,000,000	100,000	10		20,000	Aug. 1899	.20
202	Russell-Irwin, z.	Mo.	250,000	25,000	10		15,000	Oct. 1899	.10
203	Sacramento, g.	Utah.	5,000,000	1,000,000	5		138,000	Oct. 1899	.00½
204	St. Joseph, l.	Mo.	3,000,000	300,000	10		2,897,000	Sept. 1899	.50
205	Seventy-Six, g. s.	Colo.	1,000,000	200,000	5		2,950	Mar. 1898	.01
206	Santa Rosalia, g. s.	Cal.	100,000	100,000	1		130,000	Oct. 1899	.05
207	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	150,000	2,600,000	Feb. 1900	.50
208	Small Hopes, s.	Colo.	5,000 000	250,000	20		3,325,000	Feb. 1900	.10
209	Smuggler, s. l. z.	Colo.	1,000,000	1,000,000	1		1,210,000	Dec. 1899	.02
210	South Eureka, g.	Cal.	1,500,000	300,000	5		12,000	May. 1898	.04
211	South Swansea, s. l.	Utah.	150,000	150,000	1		165,000	Oct. 1899	.05
212	Specimen, g.	Colo.	1,200,000	1,200,000	1				
213	Squaw Mountain, g.	Colo.	2,000,000	2,000,000	1		10,000	Nov. 1899	.00½
214	Standard Con., g. s.	Cal.	2,000,000	200,000	10	20,000	3,919,226	Feb. 1900	.10
215	Standard.	Idaho	500,000	500,000	1		1,745,000	April. 1899	.06
216	Stratton's Independ'ce.	Colo.	5,500,000	1,000,000	5	480,000	1,440,000	Feb. 1900	.48
217	Strong, g.	Colo.	2,500,000	2,500,000	1	50,000	900,000	Feb. 1900	.01
218	Swansea, s. l.	Utah.	500,000	100,000	5	15,000	216,500	Feb. 1900	.05
219	Tamarack, c.	Mich.	1,500,000	60,000	25		6,270,000	Dec. 1899	6.00
220	Temonj, g.	Colo.	1,000,000	1,000,000	1				
221	Tomboy, g.	Colo.	1,500,000	300,000	5		812,000	Dec. 1899	.24
222	Tornado, g.	Colo.	1,000,000	1,000,000	1				
223	Union, g.	Colo.	1,250,000	1,250,000	1		82,744	June. 1896	.01
224	Union Leasing.	Colo.	1,000,000	1,000,000	1		336,000	July. 1895	.04
225	United, z. l., pref.	Mo.	1,000,000	40,000	25	20,000	60,000	Jan. 1900	.50
226	United Verde, c.	Ariz.	3,000,000	300,000	10	300,000	1,162,500	Feb. 1900	.50
227	Utah.	Utah.	1,000,000	100,000	10		179,000	Jan. 1899	.02
228	Victor, g.	Colo.	1,000,000	200,000	5		1,155,000	Dec. 1898	.50
229	Vindicator, Con., g.	Colo.	1,500,000	1,065,000	1	53,250	357,750	Jan. 1900	.05
230	War Eagle Con.	B.C.	2,000,000	1,750,000	1	52,500	545,250	Feb. 1900	.01½
231	West. Mine Enterprise.	Mont.	500,000	120,000	1		48,680	Jan. 1898	.20
232	What Cheer, z.	Mo.	225,000	22,500	10	4,500	9,000	Feb. 1900	.20
233	Wolverine, c.	Mich.	1,500,000	60,000	25		270,000	Oct. 1899	1.50
234	Work, g.	Colo.	1,500,000	1,500,000	1				
235	Yellow Aster, g.	Cal.	1,000,000	100,000	10	40,000	363,789	Feb. 1900	.20
236	Ymir, g.	B.Col	1,000,000	125,000	5		30,000	Nov. 1899	.24

G., Gold. S., Silver. L., Lead. C., Copper. Z., Zinc. This table is corrected up to Feb. 17. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.10
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	26.00
Pumice Stone, Am. powd.	lb.	.01¾@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02¼@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.17@.30
Acids—Acetic, 30% pure	100 lbs.	2.75
30% ch. pure	"	6.00
80% pure	"	7.50
Benzoic, English	oz.	.12
German	lb.	.46
Boracic, pure cryst	"	.16½
Powdered	"	.11
Carbolic, crude, 60%	gal.	.28
Cryst. 35%	lb.	.36
Liquid, 95%	gal.	.40
Carbonic, liquid	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure	"	.07
Hydrofluoric, 30%	"	.03
48%	"	.05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphuric, 98%	"	.01½
Chem. pure	"	.07
Tartaric, cryst	"	.31½
Powder	"	.32
Alcohol—Grain	gal.	2.40
Refined wood, 95@97%	"	.90@.95
Purified	"	1.20
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Chrome, com'l	"	3.50
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	1.50
Com'l	"	.01¼
Ammonia—Aqua, 16°	"	.04½
18°	"	.05
20°	"	.05½
26°	"	.07½
Ammonium—Bromide, p'r	"	.52@.55
Carbonate lump	"	.08¼@.08¾
Powdered	"	.09¼@.09¾
Muriate, gran., white	"	.06¼@.06¾
Gray, gran	"	.06¾@.06½
Lump	"	.08¼@.08½
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.12
Chem. pure	"	.60
Antimony—Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¾
Red	"	.07¾
Asphaltum—		
Ventura, Cal.	sh ton	32.00
Cuban, crude	lb.	.01½@.03½
Egyptian, crude	"	.06
Trinidad, refined	lg. ton	30.00@35.00
San Valentino	lg. ton	15.00
Seyssel (French) mastic	sh. ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	"	.02@.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01
Barytes—Am. Cr., No. 1	sh. ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
Am. Floated	"	14.50@17.50
German, gray	"	14.50
Snow white	"	17.50
Bauxite—Ga. mines: 1st grade	lg. ton.	5.00@5.10
Second grade	"	4.00@4.50
Ala., f.o.b., 1st grade	"	5.00
Second grade	"	3.85
Bismuth—Oxide, hydr.	lb	2.25@2.30
Subnitrate	"	1.30@1.35
Bitumen, "B"	"	.03½
"A"	"	.05
Bone Ash	"	02¾@.03½
Borax—Cryst. and pow'd	"	.07@.07¼
Calcined	"	.25
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.50@2.00
Acetate, pure white	100 lbs.	1.00
Sulphide	"	2.00@3.00
Sulphate	"	2.00@2.50

	Cust. Meas.	Price.
Calcium—		
Acetate, gray	100 lbs.	$1.55
" brown	"	1.10
Carbide, in ton lots, f.o.b. Niagara Falls, N.Y.	sh. ton	75.00
Carbonate, ppt.	lb.	.05
Chloride, com'l	100 lbs.	.95
Best	"	1.90
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Belgium	"	1.95@2.20
English	"	2.45@2.55
German	"	2.30@2.70
"Rosendale," 300 lbs.	"	1.10
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.11
White	"	.12.@.13½
Chalk—Lump, bulk	sh. ton	2.15
Precipitated	lb.	.05
French	"	.03
Chlorine—Liquid	"	.28
Water	"	.15
Chrome Ore—		
(50% chrome) ex ship	lg. ton	20.00
Sand	"	35.00
Bricks, f.o.b., Pittsburg, M		175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	7.70
Am. best, ex-dock, N. Y.	"	8.70
English, common	"	11.50
Best grade	"	16.50
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	2.00
Gray	"	2.50
Smalt, blue ordinary	"	.20
Best	"	.30
Chem. pure	"	5.00
Copperas	100 lbs.	.72½
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar—Crys.	"	.21½
Granulated	"	.21½
Powdered	"	.22½
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.50
Blasting powder, B.	"	1.25
"Rackarock," A.	lb.	.25
"Rackarock," B.	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.22
Glycerine for nitro	"	.13½@.13¾
Feldspar—Ground	sh. ton	7.00@8.50
Flint—(See Silica).		
Fluorspar, f. o. b. mines—		
Am. lump, 1st grade	"	7.50
2d gr.	"	7.00
Gravel	"	6.50
Crushed	"	8.00
Ground, extra fine	"	13.00
Fine	"	11.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Ganister Rock	lg. ton.	6.50
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground, American, best		20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼
True	"	.03¾
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.90
Finishing	"	1.00
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00@7.50
German (85%)	"	12.00
Calcined (Greece)	sh. ton	16.50
Domestic, soft	"	12.00@15.00
Bricks (Greece)	M.	170.00
Bricks, Am., f.o.b. Pittsburg	M.	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.03¾
Blocks	"	.06@.09
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 70@75% binoxide	"	.01¼@.01½

	Cust. Meas.	Price.
Manganese—		
Crude, pow'd 75@85% binoxide	lb.	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.24@.24½
Domestic	"	.30
Crude, prepared, domestic	lb.	.01@.01½
Marble—Flour	sh. ton	5.50@6.00
Mercury—		
Bichloride	lb.	.74
Mica—N. Y. gr'nd. coarse	"	.03@.05
Fine	"	.06@.07
Sheets, 1½x3 in.	"	.60
8x10 in.	"	13.00
Mineral Wool—		
Slag, ordinary	100 lbs.	.90
Selected	"	1.40
Extra	"	3.00
Rock, ordinary	sh. ton	32.00
Selected	"	40.00
Extra	"	50.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Oils—Black, reduced 29 gr.:		
25@30 cold test	gal.	.11@.11½
15, cold test	"	.12@.12½
Zero	"	.13@.14
Summer	"	.10½@.11
Cylinder, dark steam ref	"	.10@.15
Dark filtered	"	.13@.18
Light filtered	"	.15@.17½
Extra cold test	"	.23@.27
Gasolene, 86° @90°	"	.16@.21
Naphtha, crude 68@72°	"	10.65
"Stove"	"	.13
Linseed, domestic raw	"	.54
Boiled	"	.58
Calcutta, raw	"	.68
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—Foreign	"	.08
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27
Chrome green, common	"	.05
Extra	"	.12@.15
Yellow, common	"	10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack, com'l	lb.	.03
Refined	"	.08
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.06½
English flake	"	.09½
Glassmakers, Foreign	"	.06½@.08
Metallic, brown	sh. ton	16.00@19.50
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.08¼@.08½
Foreign, as to make	"	.09¾@.11¼
Paris green, pure, bulk	"	.12½
Red lead, American	"	.06½@.07
Foreign	"	.08¼
Shellac, "D. C."	"	.27
Native	"	.14½
Turpentine, spirits	gal.	.54½@.55
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14
Quicksilver	"	.69
Chinese	"	.80
English, imported	"	.71
White lead, Am., dry	"	.05¾
In oil	"	.06½
English, in oil	"	.08¾
Whiting, common	100 lbs.	.42
Gilders	"	.54
Zinc white, Am., ex. dry	lb.	.04¾@.05
American, red seal	"	.07@.07¼
Green seal	"	.07¾@.08
Foreign, red seal, dry	"	.06¾@.07¾
Green seal, dry	"	.06¾@.08¾
Foreign, in oil	"	.10½@.11¾
Plumbago—		
Am. lump, f. o. b. Providence, R. I.	sh. ton	8.00
Am. pulv., f. o. b. Providence, R. I.	"	30.00
German, lump	lb.	.01½
Pulverized	"	.02
Ceylon, pulv. common	"	.03¾
Best	"	.06@.10
Italian, pulv	"	.01¼
Potash—Caustic, ord	"	.05½
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst	"	.08½
Powdered or gran	"	.12
Bichromate	"	.09
Bromide	"	.46
Carbonate	"	.02¾
Chromate	"	.35
Cyanide (98@99%)	"	.28@.29
Ferro-cyanide	"	.19
Iodide, bulk	"	2.30
Permanganate, pure cr.	"	.14
Prussiate, yellow	"	.18½
Red	"	.37
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—Common (280 lbs.)	bbl.	1.60
Best	"	4.10
Salt—N.Y. com. fine abt. 380 lbs.	bbl.	.70
N. Y. agricultural	sh. ton	1.50

	Cust. Meas.	Price.
Salt—N. Y. coarse	sh. ton	$2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.02½@3.75
Refined	"	4.00@4.25
Samarskite	lb.	1.00
Silica—Best foreign	lg. ton	10.00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.40
Oxide	"	.85@1.10
Slate—Ground	sh. ton	7.50@8.25
Sodium—Acetate, com'l	lb.	.03¾
Bichromate	"	.06½
Bromide	"	.50
Chlorate, com'l	"	.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07½
Peroxide	"	.45
Phosphate	"	.02¾
Prussiate	"	.14½
Triphosphate	"	.04
Silicate, conc	"	.05
com'l	"	.01
Sulphate, gran., purified	"	.03
Sulphide	"	.01¾
Sulphite	"	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.85
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French	lg. ton	16.00
Italian	100 lbs.	1.50@2.00
Tin—Bichloride	lb.	.10@.12
Crystals	"	.20
Muriate, 36°	"	.09
Muriate, 52°	"	.15
Oxide, white, ch. pure	"	.41
Uranium—Oxide	"	1.80@3.00
Zinc—Metallic, ch. pure	"	.09
Carbonate	"	.15
Chloride	"	.05
Dust	"	.07¼
Sulphate	"	.02½

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	lb.	32.00
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium	kg.	1.90
Calcium	grm.	4.28@5.95
Cerium—Fused	grm.	1.02
Nitrate (N. Y.)	lb.	17.00
Chromium—Fused, Elect.	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.26
Cobalt—(98@99%)	kg.	6.31@7.85
Pure	"	30.94
Didymium—Nitrate (N.Y.)	lb.	60.00
Erbium	grm.	3.09
Nitrate (N. Y.)	lb.	62.00
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm.	4.05
Iridium	"	1.43
Lanthanum—Powder	"	4.28
Electrol, in globules	"	9.04
Nitrate (N. Y.)	lb.	57.00
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—In bars	kg.	6.19
In wire	"	9.99
Powdered	"	5.71@6.90
Molybdenum—Fused	grm.	.20
Powder, 95%	kg.	2.62
Niobium	grm.	3.81
Osmium	"	.95
Palladium—Wire	"	.95
Sponge	"	.71
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.62
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.43
Selenium—Com'l powder	"	33.32
Sublimed powder	"	42.84
Sticks	"	35.70
Silicium—Com'l	"	28.56
Pure crystals	"	59.50
Sodium	kg.	1.07
Strontium—Electrol	grm.	6.19
Tantalum—Pure	"	3.57
Tellurium—Ch. p. sticks	kg.	119.00
Powder	"	95.20
Thallium	"	26.18
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	5.00
Titanium	kg.	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	1.67
Purest, powder	"	6.43
Yttrium	grm.	2.38
Nitrate (N. Y.)	lb.	62.00
Zirconium—Com'l	kg.	119.00
Nitrate (N. Y.)	lb.	9.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to March 3d. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.